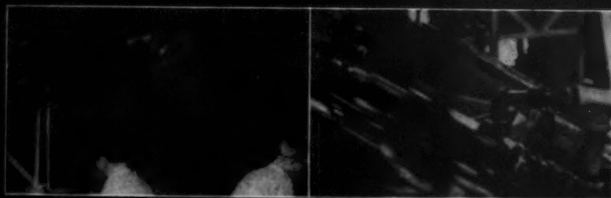


Western Industry

September
1958

Vol. XXIII No. 9



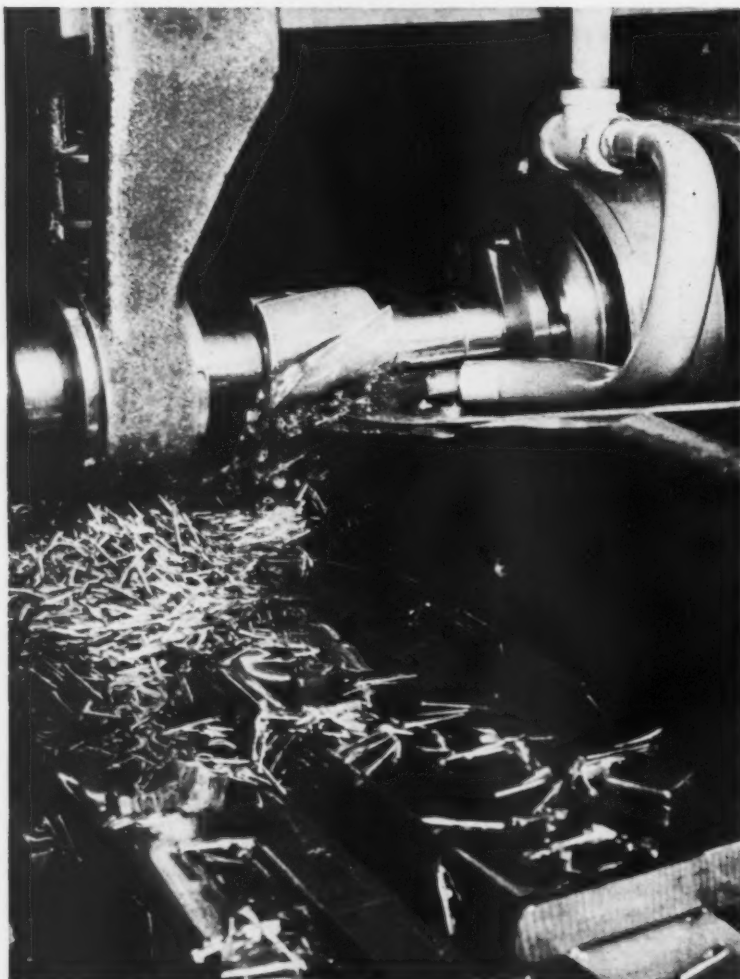
Power Transmission

PLUS: 32-PAGE BUYERS' DIRECTORY

STANDARD ENGINEER'S FIELD REPORT

PRODUCT **Chevron Cutting Oil TNC**
FIRM **Experimental Specialties Co.**
El Segundo, Calif.

Mills titanium to .0025" tolerances



Chevron Cutting Oil TNC protects carbide tool (above) as it cuts slat-track contour from titanium vanadium alloy with Rockwell hardness of 68! This Sunstran rise and fall tracer-control milling machine makes missile and aircraft parts at Experimental Specialties Co. Chevron Oil's extreme pressure additives help machine maintain tolerances of plus or minus .0025", holding rejects to minimum. Reports firm's president, Harry McKillip: "Chevron Cutting Oil TNC is the most economical and efficient general purpose cutting oil I've found in 30 years in this business. Only TNC does the job for us on aluminum, brass, Dural, HYTUF and titanium."



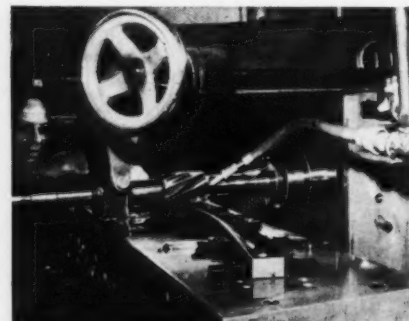
For Expert Help on lubrication or fuel problems, call your Standard Engineer or Representative, or write to 225 Bush St., San Francisco 20, California.

TRADEMARK "CHEVRON" AND CHEVRON DESIGN REG. U.S. PAT. OFF.

STANDARD OIL COMPANY OF CALIFORNIA



End milling on titanium piece is done by Cincinnati rise and fall cam-control machine which cuts slot-like track. Jobs run from 50 to 1000 duplicate parts. Titanium alloy in use has sufficient hardness to destroy file teeth.



Fritz-Werner Horizontal Milling Machine mills flat parallel surfaces of slat-track. Firm reports all-purpose Chevron Cutting Oil TNC, used in 40 pieces of shop equipment, eliminates need to change oil when working different materials.

Why Chevron Cutting Oil TNC solves metal-cutting problems



- Will not etch or corrode machine parts
- Extends tool life, assures precision finishes
- Flushes away cuttings readily
- High-cooling and lubricating qualities, very stable

... for more details, circle No. 1 on Reader Service Postcard



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John G. P. Sherlock

NEWS EDITOR
M. C. Tracy

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Martin P. Semans
The Plan Room Building
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Los Angeles 15, Calif.
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CONSULTING EDITORS
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Subscription rate: \$10.00 per year.
Cost per single copy: \$1.00

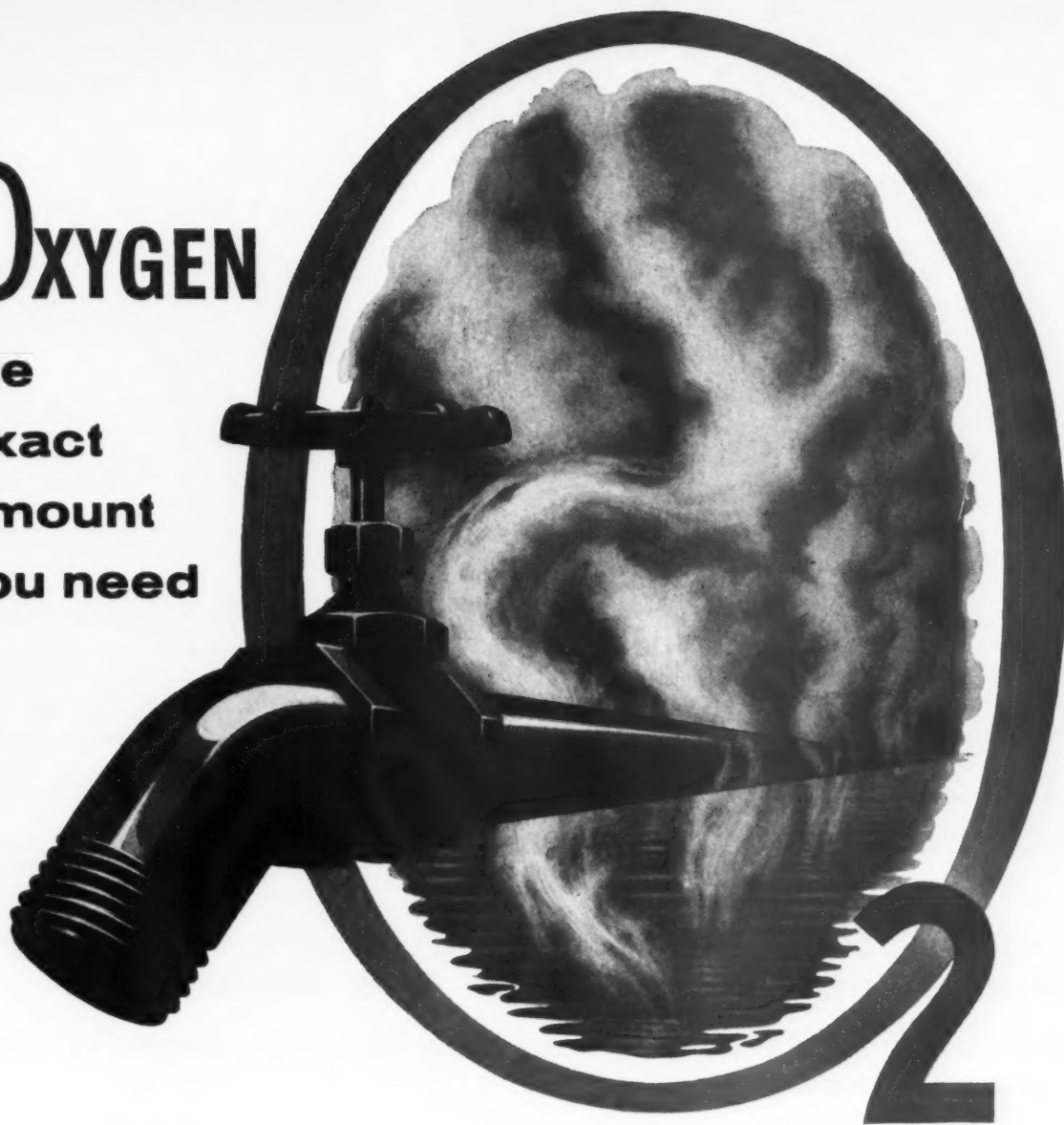
Accepted as Controlled Circulation Publication at Portland, Oregon. Postmaster: Please send Notice 3579 to Western Industry, 609 Mission Street, San Francisco 5, California. For Change of address, write Circulation Dept., 609 Mission St., San Francisco 5, Calif.

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PHOTOGRAPHED UNDERWATER AT FLORIDA'S SILVER SPRINGS

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The Immersible motor can be adapted to operate in any kind of liquid — fresh or salt water, sewage, chemicals, or abrasive industrial cutting oils. It's the ideal means to provide power in a vat or sump — at the bottom of a pool, lake, or ocean!

No matter how deep your setting, the Immersible motor provides close-coupled power — saves you the need for expensive jack-shafting, intermediate bearing supports between pump and a surface-mounted motor, and mounting structures.

The motor is oil-filled and sealed at the factory. Diaphragm breathers equalize internal and external pressure — eliminate pressure at the shaft seal and

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The Immersible, as shipped, is ready for horizontal or vertical mounting on pumps, agitators, mixers, or special equipment. Sizes range from $\frac{3}{4}$ to 40 hp. For additional information contact your local Louis Allis District Office, or write for Bulletin 2300, The Louis Allis Co., 438 E. Stewart Street, Milwaukee 1, Wisconsin. But do it today!

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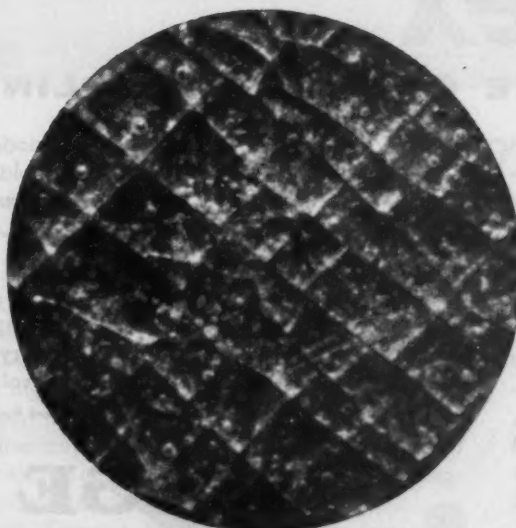


Taping Costs DOWN!

Taping Production UP!



with new *FLASH-TITE*® gummed tape



Photomicrograph of New FLASH-TITE enlarged 40 times.

SEND FOR FREE SAMPLE ROLL and prove how the new Flash-Tite keeps taping production UP, taping costs DOWN. Flash-Tite, Crown Zellerbach, 343 Sansome, San Francisco 19, California. Dept. 1,

the tape that gives you the 2-WAY BONUS:

- Micro Pliability
- Flash Grab Glue Formula

You, too, can reduce costs in your shipping department, because new Flash-Tite makes taping easier, faster, more effective.

New Flash-Tite is diagonally broken to give you these plus benefits:

Greater Pliability—surface tension is so relaxed that new Flash-Tite lies flat, molds easily and quickly around corners. Tail end curl problems are eliminated... Flash-Tite is usable to the last inch.

Greater Wetability—the thousands of minute water channels, broken in the glue film (see photo at left) activate the glue more rapidly and completely. Better taping results.

New Flash-Tite Flash Grab Glue Formula means:

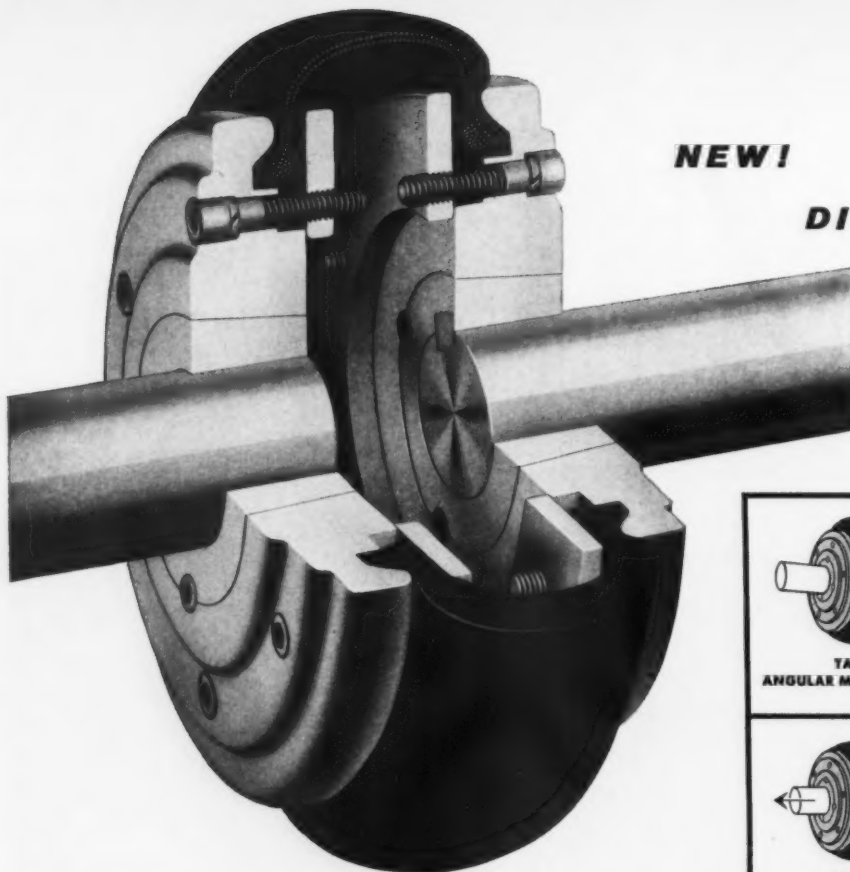
Faster Initial Tack—so that the rapid tapper can capitalize on his speed. Yet this new formula has retained Flash-Tite's traditional quality of staying sticky for a long period.

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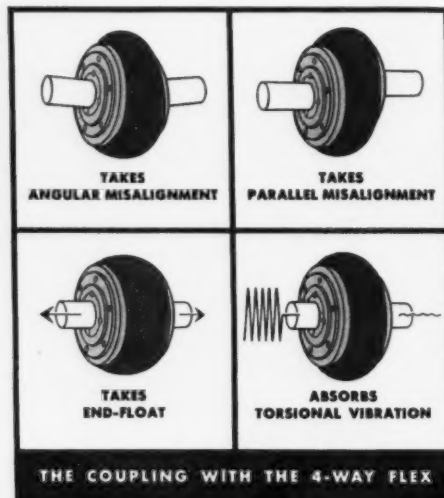
Para-flex

FLEXIBLE CUSHION COUPLING

THIS coupling "swallows up" shaft misplacements. It automatically compensates for end-float, parallel misalignment, angular misalignment or *any combination of all three*. Moreover, it cushions the stresses of shock loads. And it absorbs torsional vibration—reducing noise and protecting machinery from vibration's destructive forces.

Here is a new type of performance—made possible by the development of a tire-like flexing element. Synthetic tension members, bonded together in rubber, give this element the stamina and dependability of modern, high-speed, high-load, shock-absorbing truck tires—and the ability to respond magically to all manner of changing shaft conditions.

Para-flex takes minimum space on the shaft. Mounting is simplified through the use of standard Taper-Lock bushings—no reboring, no machining. Safety is promoted by flush design; there are no protruding



parts. No lubrication is required, no periodic inspection. And since the flexible member is molded with a transverse split, it can be replaced *without moving either the driver or driven machine*.

Para-flex Couplings are stocked by Dodge Distributors in popular transmission sizes. They are available from factory stock in capacities up to 825 hp at 1200 rpm. Call your distributor for early delivery to *make your own test*. You'll witness something revolutionary! DODGE MANUFACTURING CORPORATION, 6600 Union, Mishawaka Ind.

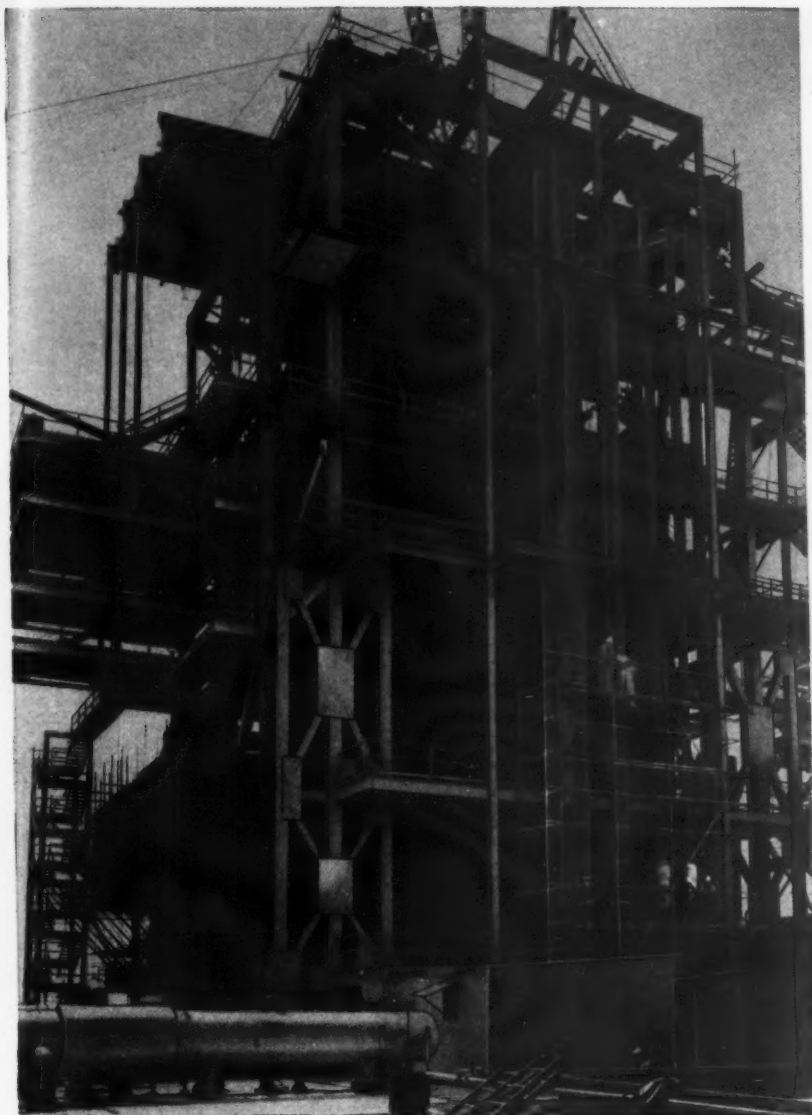
DODGE
of Mishawaka, Ind.



CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the *white pages* of your telephone directory for "Dodge Transmissioneer."

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WESTERN INDUSTRY — September 1958



National made the heavy wall piping for this large steam-turbine generating plant, shown under construction at Huntington Beach, California.

Bore surveys of the heavy wall pipe are made by National personnel. The pipe was produced in various lengths up to 34 feet.



National Supply solves a 2400 psi—1050 degree piping problem

In the steam turbine generating plant at Huntington Beach, California, the boilers will deliver 1050 degree steam at 2400 pound-per-square-inch pressure. Distributing this high-temperature, high-pressure steam called for a special property pipe, since even a pin-hole size leak in a line may cut a man in half! Producing the pipe called for special equipment, special skills and a willingness to tackle a difficult, out-of-the-ordinary job.

National's Torrance Plant made the pipe from solid forgings 13 inches in diameter and with a wall thickness of 2½ inches. One of National's special trepanning lathes permitted precision boring of the billets at high speed.

The fittings, subject to the same severe service conditions, were also forged, bored and milled in our Torrance

Plant. Assembled into a steam distribution network, the pipe and fittings proved equal to every demand.

The combination of facilities, abilities and pioneering spirit that enabled National Supply to do this job so well is available on other custom jobs. Just call our Torrance Plant—the largest completely integrated machinery-making plant in the entire West.



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Photos courtesy of Arvin Industries, Inc.

Mass Material Handling Flexibility . . . that's what FLOW-MATIC* brings to Arvin Industries, Inc., a volume producing corporation that constantly studies modern handling methods. Reports Arvin: the Powell Flow-Matic* works exceptionally well as a mass handling system. We use it in conjunction with belts and over-head conveyors. We find it equally as efficient as a working inventory storage unit and an "on stream" production hopper.

Arvin is but one of the many mass-production concerns that finds Flow-Matic* *really* simplifies handling; honestly reduces costs. Why not find out about this advanced, yet job proved, method today.

The Powell Pressed Steel Co., Hubbard, Ohio.

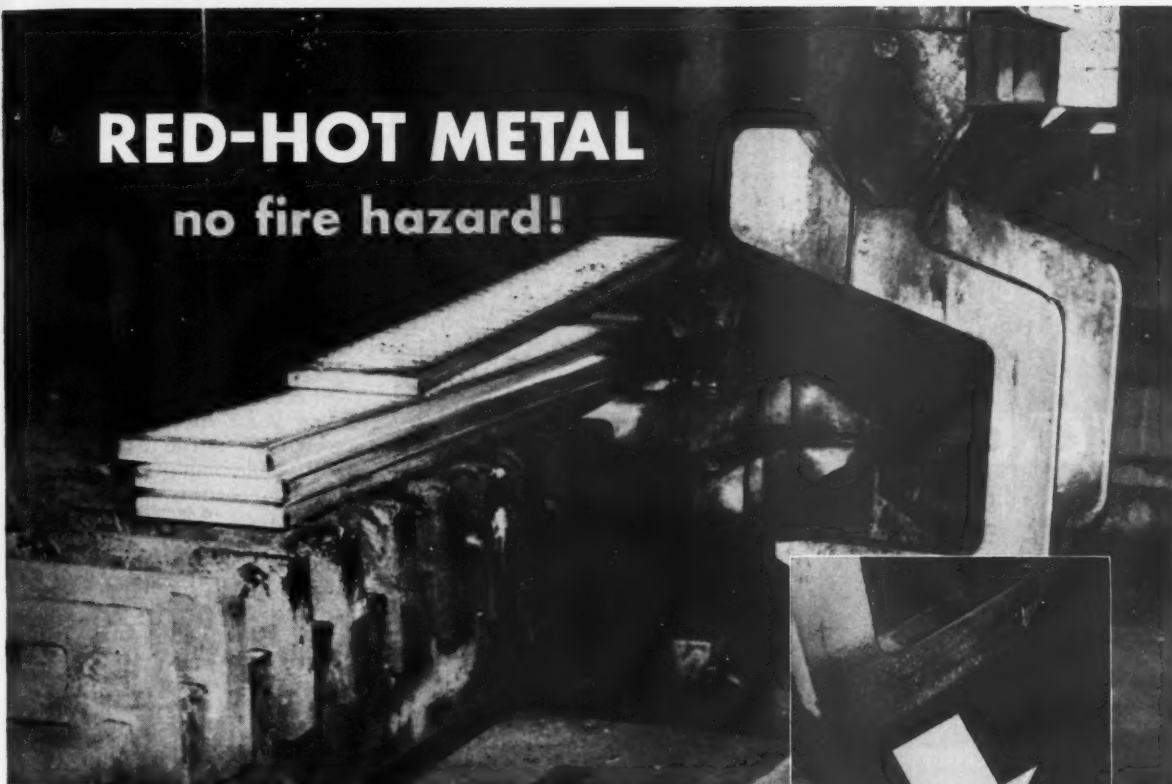
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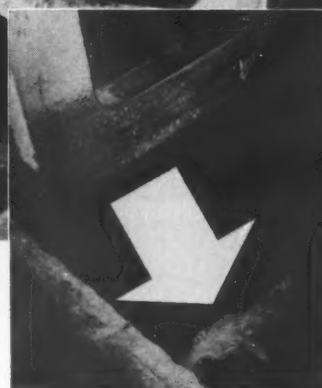
RED-HOT METAL

no fire hazard!



(Above) Red-hot steel slabs, weighing over 2 tons each, are at arm's length from hydraulic lines filled with Irus Fluid 902—YET NO FIRE HAZARD.

(Right) The distinctive yellow color of Irus Fluid makes it easy to spot and trace hydraulic line leaks.



“After numerous tests, we selected Shell Irus Fluid 902 because of its excellent fire resistance and low cost,”

says Norman Bracht, Lubrication Engineer, Alan Wood Steel Company, Conshohocken, Pa.

A fire in the strip mill, causing serious equipment damage and plant down time, convinced the Alan Wood Steel Company that a switchover to a fire-resistant hydraulic fluid was imperative. After extensive testing with various commercial types, Shell Irus Fluid 902 was selected. Now . . . twelve months later . . . Alan Wood is convinced that serious hydraulic fires in strip mill tilt table are a thing of the past.

Irus* Fluid 902 is a specially compounded water-in-oil emulsion which has exceptional fire resistance. Plant tests show, time after time, that Irus Fluid 902 *actually snuffs out fire!*

Many plant operators, like Alan Wood Steel, have discovered that Irus Fluid is economical . . . costing up to one-third less than other fire-resistant fluids, yet its performance is comparable in every practical respect.

If your present hydraulic equipment is vulnerable to accidental fire hazard, we suggest that you obtain complete technical information on Shell Irus Fluid 902. Write: Shell Oil Company, 50 West 50th Street, New York 20, N.Y. or 100 Bush Street, San Francisco 6, California.

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SHELL IRUS FLUID 902
a low-cost, fire-resistant hydraulic fluid



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THE CAPEWELL MFG. CO.
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ASTE meet eyes Space Age Tooling

ONE OF THE LARGEST IN THE WEST—the American Society of Tool Engineers' Western tool show and conference will be held in Los Angeles between September 29 and October 3.

Over \$5,000,000 worth of the latest machines, machine tools and related products will be housed in the Shrine Exposition Hall, and will combine with a program of technical papers, symposia, panel discussions and plant inspection tours to illustrate "Tooling for the Space Age" theme of the week-long show.

Featured will be over 30 basic categories of the newest manufacturing equipment, comprising 200 exhibits. Although emphasis at this show will be on tooling for the aircraft and missile industries, it will not be limited to these areas alone. Almost every type of industry in the West will be represented.

The latest information and facts relating to production in the space age will be presented in 56 technical papers, each read by its author. And two special symposia . . . metal forming (9 papers), and metal removal (12 papers) . . . will provide concentrated analysis of the basic problems common to all metalworking industries.

Six panel discussions by leading authorities will include papers on numerical control, the fabricating characteristics of new metals, and the tooling problems behind the Atlas and Snark missiles. Other discussions will cover such innovations as closed circuit television and optics.

Throughout the week guided inspection visits will be conducted

through many of the major plants in the Los Angeles area, and a complete program of sightseeing tours and special functions has been prepared for the many ladies expected to attend the conference.

INDUSTRIAL CORROSION—will be considered in the symposia and short course to be presented by the 8th Western Region Conference to be held in the Statler Hotel, Los Angeles, November 17-21.

The Western region is one of six regions in the United States and Canada comprising the National Association of Corrosion Engineers.

Symposia will be held on corrosion in refineries, aircraft and missiles, food processing industry, marine environments, chemical processes, underground metallic structures and petroleum production.

The short course will be held the last two days of the conference. It will cover cathodic protection instruments, surface preparation, application of coatings and paint and plastic coatings.

Attendance will be limited to 100.

You may register in advance with **Frank V. Wilby**, Southern California Gas Co., P.O. Box 3249, Terminal Annex, Los Angeles 54.

THE ANNUAL MEETING of the Northwest Hardwood Association will be held September 26-27 at the Hotel Congress in Portland.

Featured subjects and speakers

... continued on p. 16

RELAXED SIPMHE MEMBERS—pictured (by our Southwest editor) as they sailed toward the third annual packaging conference held on Catalina Island. About 40 SIPMHE and North American Aviation packaging men attended. Pictured (left to right): **Bob Weldon**, **K. D. Miller**, **Bob Howe**, **Andy Wall**, **Pete Peterman**, **Paul Franklin**, **Dennis Friedland**.



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and protect against corrosion and abrasion with DURAFLOR. This industrial epoxy resin-type floor paint has approximately four times the abrasive resistance of the best floor paints and varnishes. In addition, Duraflor stands up well against corrosive attacks by acids, alkalis, solvents, salts and greases. Ideal protection for all types of floors — wood, stone, concrete or brick. Use it as a long-wearing protective surface for work tables and benches, too.

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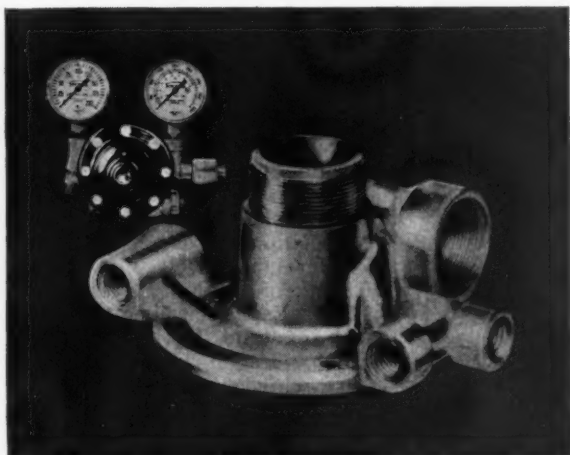
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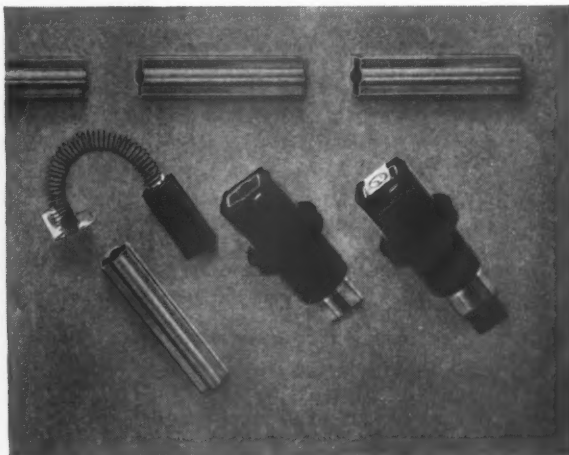
WESTERN INDUSTRY — September 1958

TAKE A FRESH LOOK

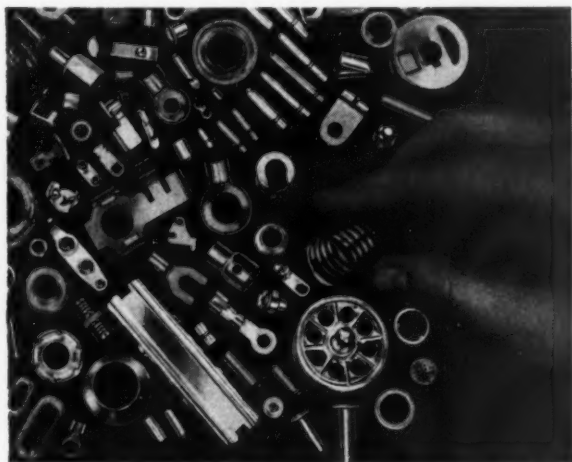
at the way you are fabricating metal parts. Cost-cutting possibilities are almost unlimited with these Anaconda pre-formed mill products and press products.



DIE-PRESSED FORGINGS, made of twice-wrought metal, offer superior uniformity, denseness, accuracy. *Savings*: replace more costly built-up assemblies—often are less in first cost than sand castings—require minimum surface machining to size—simplify secondary operations—lower tool cost—lower finishing cost.

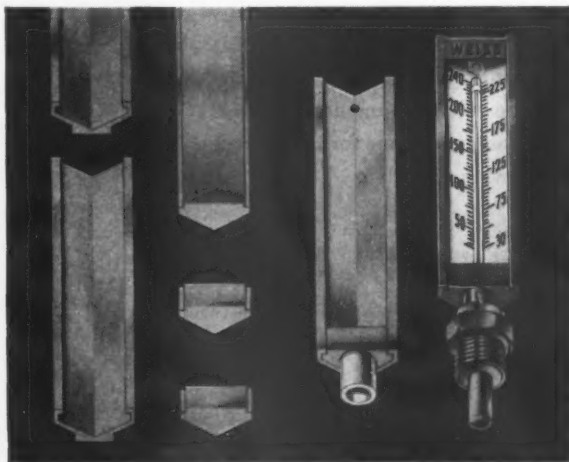


SPECIAL-SHAPE TUBES can, as in the case of Electrolux, save several steps in arriving at a finished part. Brass electric-motor brush holder (above) is cut economically from long lengths of tube pre-shaped to accommodate both brush and spring. Uniform accuracy of all dimensions helps provide good brush stability.



MULTIPLE-PLUNGER AND PROGRESSIVE-TOOL-PRESS PRODUCTS are cutting costs throughout industry—often over 50%. Main reasons: The American Brass Company's complete design engineering service, long experience, specialized production equipment, a big selection of stock tools. Metals: copper, copper alloys, nickel, iron, steel, stainless steel, or aluminum.

HERE are four immediate approaches to cutting costs. Re-evaluate your designs and fabrication methods with these short cuts to finished products in mind. Wherever you spot a possible saving, send a sample, drawing, or description—with the quantity you need, the metal or properties you require—and ask for a quotation. Address: The American Brass Co., 14900 Garfield Ave., Paramount, Calif. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. SAS3PC



EXTRUDED SHAPES. Wherever you fabricate from solid rod or bar—or castings—consider savings in machining, tooling and scrap by use of extruded shapes. Albert A. Weiss & Sons substituted two extruded shapes, above, for a sand casting—cut cost of thermometer case 41%, got an additional 30% saving in assembly because of consistently uniform dimensions.

**DIE-PRESSED FORGINGS • SPECIAL-SHAPED TUBES
EXTRUSIONS • FABRICATED METAL GOODS**
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On Time Delivery is but one of many Acme Services that assures customers of maximum production efficiency and economy. Call on us at any time for Engineering Service and advice.

Write Dept. 2-M for new illustrated 100 page catalog which includes new engineering section showing 36 methods of chain driving.



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COMPLETE LINE OF ROLLER CHAINS AND SPROCKETS • DOUBLE PITCH CONVEYOR CHAINS • STAINLESS STEEL CHAINS • CABLE CHAINS • FLEXIBLE COUPLINGS • STANDARD AND SPECIAL ATTACHMENTS

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prompt delivery
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chains, sprockets,
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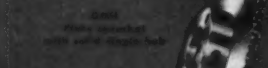
Roller chains, sprockets and couplings



Roller chains



Conveyor chains, sprockets and large rollers



**WESTERN
MEETINGS**

continued from
p. 12 . . .

include: "The Hardwood Industry as an Asset in the Expanding Economy of the Pacific Northwest," by **Marshall N. Dana**, assistant to the president, U. S. National Bank; "How Jim Hill Developed the Lumber Industry of the Northwest," by **Ralph V. Backstrom**, Great Northern Railway Industrial and Agricultural Development Dept.; "How to Sell Pacific Coast Hardwoods," by **Burdett Green**, former executive vice president, Fine Hardwoods Association;

"Development, Relief and Ill Effects of Drying Stresses," by **L. D. Espenas**, chief, Physical Research and Development Division, Oregon Forest Products Research Center; "Molders and Matchers," by **H. G. Blake**, S. A. Woods Machine Co., Portland; "Recommended Amendments to the Association's Hardwood Lumber Grading Rules," by **Robert McGregor**, president, West Coast Hardwood, Ltd.

Also on the agenda will be election of officers and three directors. A discussion of new, lower trans-continental freight rail rates on Western hardwoods into Eastern markets will be led by **Harry D. Smith**, Western division traffic manager, Weyerhaeuser Sales Co., Tacoma, Wash.

Further information about the meeting can be obtained from **Harry O. Mitchell**, secretary-manager, Northwest Hardwood Association, 3253 Commodore Way, Seattle 99, Wash.


EFFECTIVE HANDLING OF HUMAN RELATIONS—will be the aim behind the Sensitivity Training for Managers workshops that will meet in four Southern California cities, starting with a general session at the University of California conference center at Lake Arrowhead September 26-28.

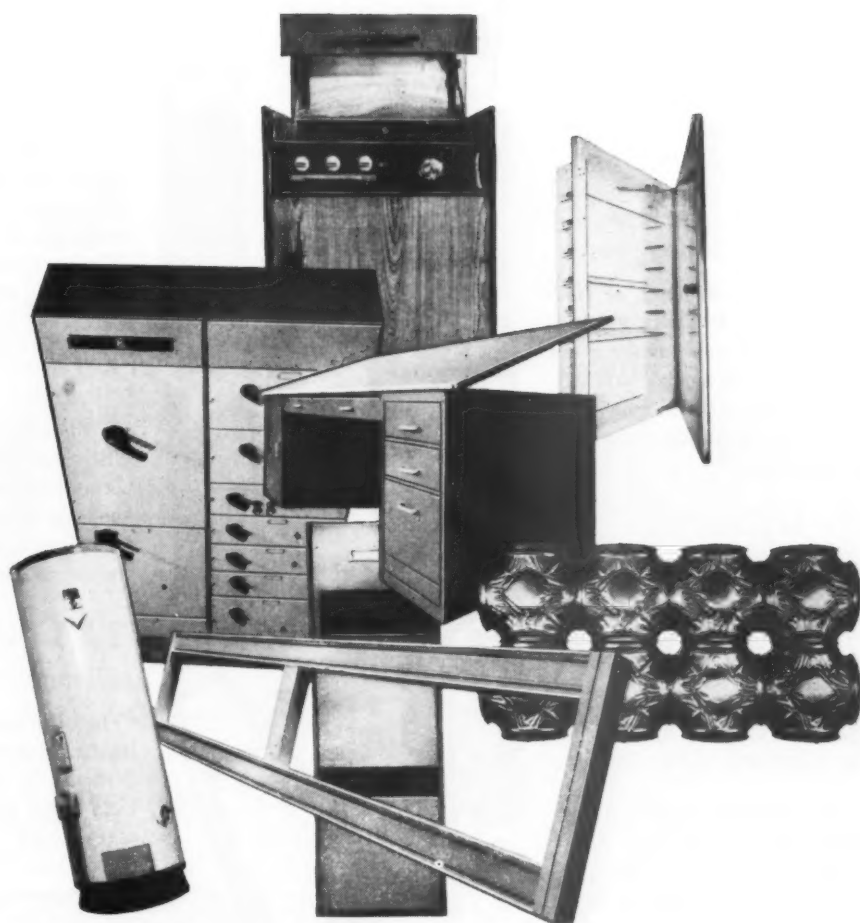
Subsequent weekly evening meetings will be held October to December in Los Angeles, Pasadena, San Diego, and for the first time in Riverside.

Further information is available from University of California, Los Angeles 24.

... continued on p. 22

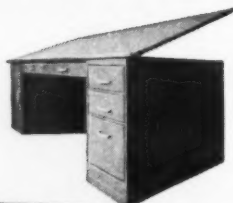
What's the "inside story" on all these Western products?

turn page for answer 



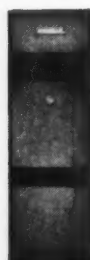
USS* Cold Rolled Sheets help sell these leading Western products

"The uniform surface of USS Cold Rolled Sheets takes a handsome baked enamel finish for a smooth appearance and extra sales appeal," says Mr. James R. Lockwood, Executive Vice President, Pioneer Manufacturing Co., Los Angeles, California.



"The dependable strength of USS Sheets assures rigidity in these desks designed to last a life-time," says Mr. Judson E. Roberts, Vice President, Holga Metal Production Co., Van Nuys, California.

"In GE Motor Control Centers, these Cold Rolled Sheets blend strength and beauty for maximum industrial sales appeal," says Mr. R. A. Else, District Sales Manager, General Electric Company, Seattle, Washington.



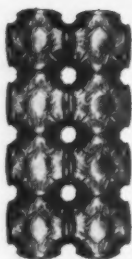
"We make a top-quality product and we depend on the consistent uniformity of USS Cold Rolled Sheets to fabricate our furnace casings and heating elements," says Mr. Roy W. Weeks, General Manager, Western Zone, Mueller Climatrol, Div. of Worthington Corp., Alhambra, California.

"The consistent smoothness of USS Sheets enables us to apply a handsome stain-free finish, to make every unit its own best salesman," says Mr. James E. Kercheval, Vice President, General Air Conditioning Corp., Los Angeles, California.



"We count on dependable quality USS Sheets to form seamless, round-cornered medicine cabinets...and help keep our sales curve climbing," says Mr. Harold Aisley, President, Jensen Industries, Los Angeles, California.

"The formability, strength and durability of USS Sheets are three sound reasons for Airfloor's outstanding sales record," says Louis J. Leemhuis, President, Airfloor Company of California, Inc., Santa Fe Springs, California.



"The slim and graceful lines of our lighting fixtures are deceiving, for underneath is the durable strength of USS Cold Rolled Sheets. A strong sales point," says Mr. Leonard A. Hobbs, Vice President, Smoot-Holman Co., Inglewood, California.

There's one right USS Steel for your production requirements, too. Write us for further information, attention Customer Service Department WI9, 120 Montgomery St., San Francisco 6.

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WESTERN INDUSTRY — September 1958

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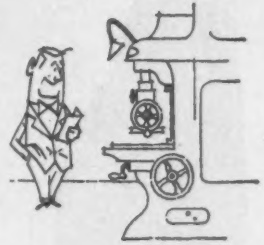
For more information, write:
AMERICAN SOCIETY OF TOOL ENGINEERS
10700 PURITAN AVE.
DETROIT 38, MICH.



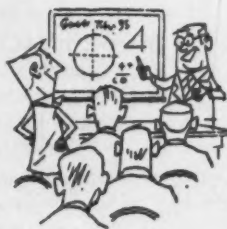
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 everything that's new in tooling and production equipment.

All the very latest advances and improvements in more than thirty basic categories of industrial products will be on display. It's your chance to see tooling's future, *your* future at one time under one roof. Don't miss it! Plan *now* to attend the West's most outstanding industrial event.



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 fact-packed technical conferences, symposia and panels.

Fifteen major symposia and panels ... conducted by eminent authorities ... will be devoted to subjects of vital interest, including: Tooling Space Airframes; Sandwich Construction for Aircraft; Forming the Exotic Metals; Tooling for Electronics; Numerical Control in Missile Production; Plastics in Tooling.

MEET

 the men who make the wheels of Western industry go 'round.

What better opportunity to meet and exchange ideas with management, engineering, design, production and industrial sales people? And what could be more important, in today's highly competitive market, than to be informed and up-to-date on all the latest production developments?



INSPECT

 some of the finest plants in the Los Angeles Area.

You'll see industry in action, too. Plant tours scheduled include: Byron Jackson Tool Co.; Douglas Aircraft Co.; Long Beach Naval Shipyard; Crown Zellerbach Corp.; Consolidated Electrodynamics; Hughes Products Div., Hughes Aircraft; United States Electrical Motors; American Can Co.; Mercury Div., Ford Motor Co.; Lever Bros. Co.; Northrop Aircraft Co.



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**"The GP man has the right cutting fluid.
Get him over."**

When you figure production costs to a fraction of a cent, the shut-down of a metal cutting tool along the line can mean your shirt. That's why successful outfits call in the local GP man for help.

He knows the problems you're up against. That's his job, and he's good at it. He not only knows the right cutting fluid for every job, he's got it. Result: precise tolerances, fewer rejects. Reduced shut-downs, longer tool life. Lower operating, maintenance and overhead—higher profits.

Mobil cutting fluids are by far the least of all your production costs. Yet they can assure a healthy profit margin for you many ways. Don't lose your shirt on your next contract. Call your local GP man today.



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CORPORATION**

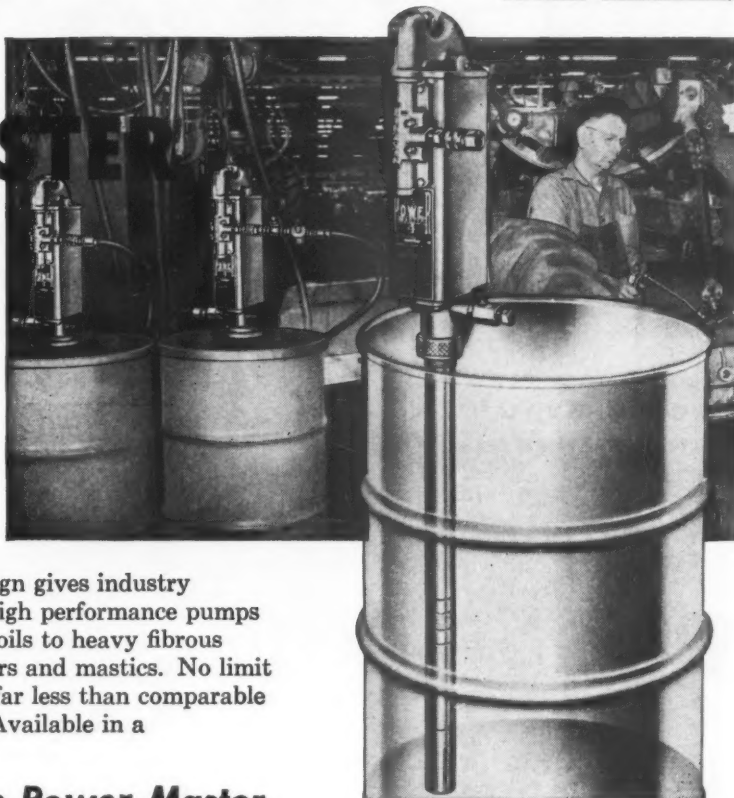
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THE *New* **POWER-MASTER**

SERIES PUMPS
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materials assure

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Power-Master ... years-ahead design gives industry a complete range of dependable, high performance pumps to handle all materials from light oils to heavy fibrous greases and viscous coatings, sealers and mastics. No limit to industrial applications ... cost far less than comparable pumps to operate and maintain. Available in a great number of pressure ratios.

It pays to standardize on Power-Master

HIGH VOLUME OUTPUT—Air Motor features extra long stroke for powerful, uniform delivery on both up and down strokes. **Shovel-Type Foot Valve** adds mechanical priming to normal suction ... assures positive prime with all industrial lubricants even at lowest temperatures.

STURDY CONSTRUCTION—Plunger and Bushing of case hardened Nitraloy steel ... prolongs life ... resists wear. Pump Outlet Body of all steel, one-piece construction ... hydrogen brazed. Withstands constant pulsation and extreme pressure. All moving parts are of tough, heat-treated steel.

TROUBLE-FREE, POSITIVE PERFORMANCE—Air Motor operation is 100% pneumatic ... no springs to wear out, rust, or lose tension. Air Valve is stall-proof, leak-proof and pre-lubricated ... toggle action assures positive tripping.

HIGH EFFICIENCY—Advanced design, double-acting mechanisms assure dependable low surge operation with minimum air consumption. Large air passages allow unrestricted venting.

PRECISION MADE—All mating surfaces of plunger, Bushing and Air Valve are microlapped to high tolerance ... prevents

by-passing lubricant or bleeding off air. No washers or packings to replace.

SIMPLIFIED MAINTENANCE—Modular design of **Pump Tubes** provides extreme ease of disassembly ... invaluable when using compounds which may "set up," such as paints, plastics, etc. Entire mechanism can be assembled only "hand tight" and function perfectly for an indefinite period. **Air Motor Piston and Cylinder** ... No oiling required ... minimum friction ... no leather cups.

LIGHT WEIGHT—Generous use of aluminum makes **Pump** amazingly light in weight and distributes heat to prevent "icing" of **Air Valve**.

QUIET OPERATION—Exhaust port is free-flow in design and shielded by sleeve to produce a natural muffling effect.

INDUSTRY-WIDE APPLICATIONS—Five **Pump Tubes** are available for the **POWER-MASTER** series providing 19 ratios from 2 to 1, to 75 to 1. Meets all industrial requirements. Handles all materials, from light, volatile solvents to heavy mastics.

For complete information on the new Power-Master series, contact your nearest Lincoln distributor ... and write for new Lincoln Catalog No. 65.

Lincoln





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NOW,—and for the life
of the building!

pressSwitch

It's time for the switches... and "Presswitch" is your choice for smooth, dependable fluorescent lighting control. From the installation word "go", throughout the life of the building, "Presswitch" is "quality you can put your finger on".

"Presswitch" saves installation time, labor and materials. A thru-connection eliminates the usual ground wire splice and the time-consuming cost of taping the splice or inserting a wire nut. Wires normally spliced are securely joined by inserting them under a screw terminal designed for the purpose. (See photo at right.)

Once installed, "Presswitch" looks as smooth as it acts. It's "on" or "off" with the slightest press of the finger or touch of the elbow, providing greater operating convenience wherever it is installed.

Ask for "Presswitch" in single pole, double pole, three-way and four-way, with ivory or brown nylon button. It operates in any position, fits standard boxes, utilizes standard wall plates.

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15 amps., 120-277 volts
Single pole A.C. "PRESSWITCH"
with thru-connection



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San Francisco, California
1675 Hudson Avenue

IN CANADA:
Scarborough, Ontario
1160 Birchmount Road

WESTERN MEETINGS

continued from
page 16

ADVANCED PROGRAMS for the Northern California chapter of the American Material Handling Society have been scheduled by **Ray Perin**, program chairman.

The schedule reads: **Oct. 2**—"Recent Developments in Rail Cars," Hotel Leamington, Oakland; **Nov. 6**—"Conveyor Equipment," Hotel Whitcomb, San Francisco; **Dec. 4**—"Lift Truck Developments," Hotel Leamington, Oakland; **Jan. 8**—"Caster and Floor Trucks," Hotel Whitcomb, San Francisco; **Feb. 5**—Annual Party; **March 5**—"Industrial Truck and Ram Tractors," Hotel Leamington, Oakland; **April**—Annual Conference on Material Handling; **May 7**—Material Handling Institute's Traveling Clinic.

The chairman in charge of field trips, **Bob Griffin**, reports the following scheduled: **October**—Viewing the multiple line palletizing operations and warehousing at the California and Hawaiian Sugar Refinery. **February**—Mechanical candling, sorting and packing of Nulaid eggs at Poultry Producers of Central California. **April**—Innovations and technical developments in the new warehouse of the Eastman Kodak Co.

Further information may be obtained from **Ellis Woolley**, chapter president, Naval Supply Center, Oakland, Calif.

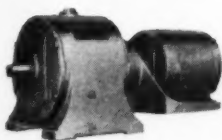
ADVANCED PROGRAMS for the Southern Calif. chapter of the Society of Industrial Packaging and Materials Handling Engineers have been announced.

The program for each month is: **October**, "Material Handling"; **November**, "Commercial Airlines and Motor Freight"; **December**, "Furniture"; **January**, "Plastics and Flexible Films"; **February**, "Military and Advanced Techniques"; **March**, "Metal Containers and Food Packaging"; **April**, "Vendor Night"; **May**, "Space Age."

Further information may be obtained from **Noble W. Jones**, SIPMHE chapter president, who is director of sales and engineering for the Industrial Packaging Division of Bekins Van & Storage Co., Los Angeles.



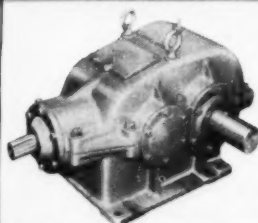
StraitLine Speed Reducer



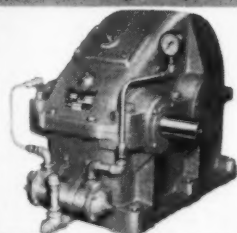
StraitLine All-Motor Reducer



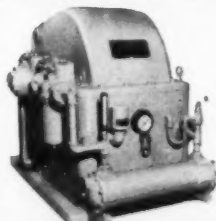
SpeedMaster Reducer



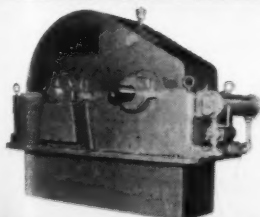
SpeedMaster Right Angle Reducer



SpeedMaster Medium Speed Unit



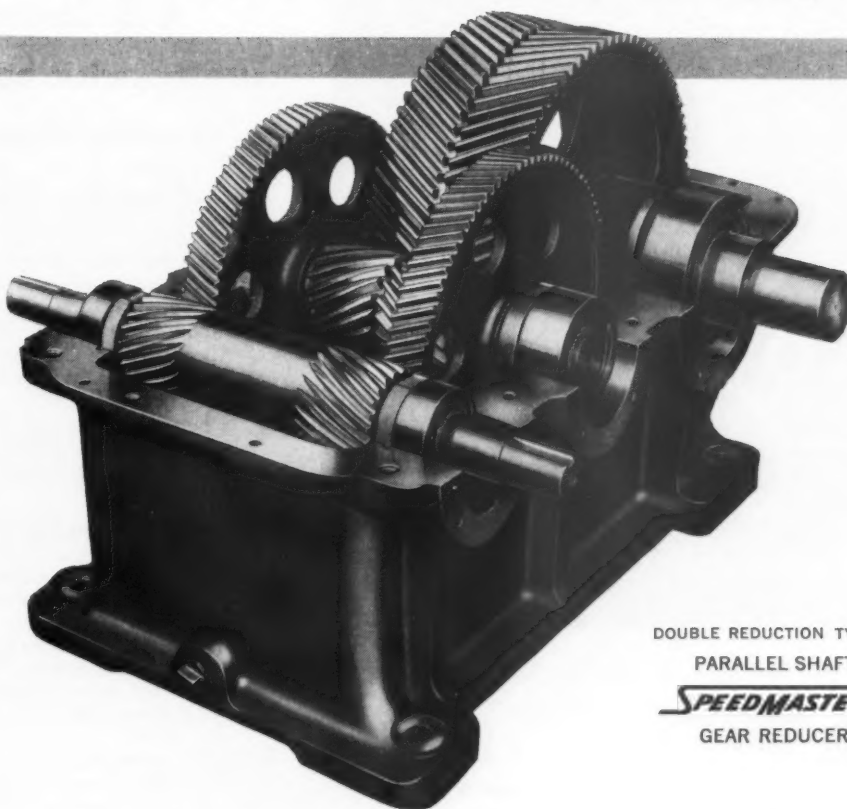
Small SpeedMaster High Speed Unit



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**power transmission equipment
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The customer's needs are always the starting point of a Western Gear application, and customer benefits are built into every piece of Western Gear equipment... greater reliability, increased production, lower maintenance costs, no-cost engineering assistance... all benefits that save you time and money.

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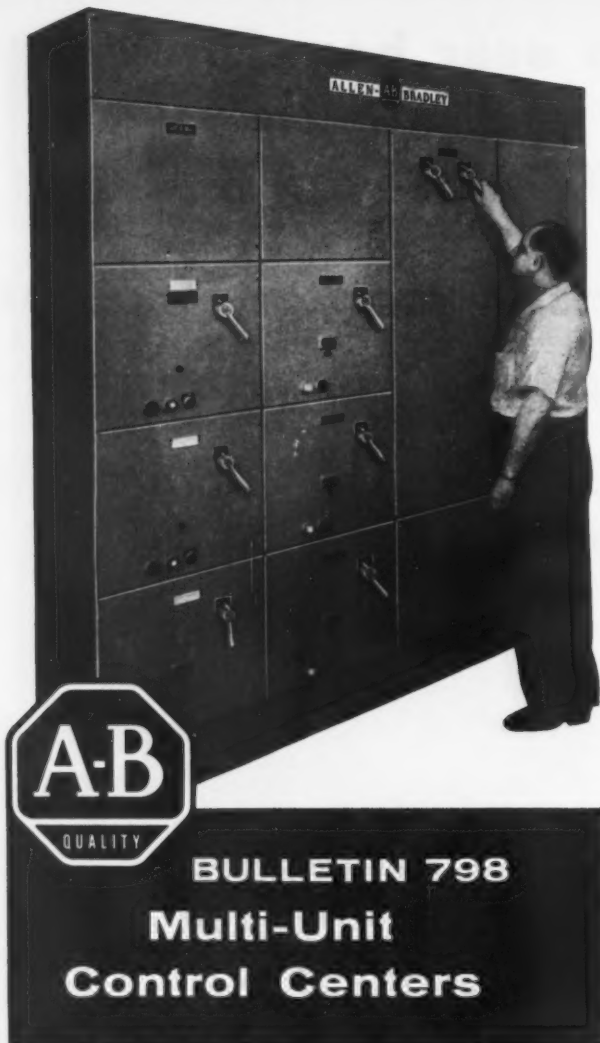
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☐ Parallel Shaft Speed Reducers Bulletin 5802
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Company _____
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5814

and many other types not shown



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A-B Control Centers
are popular because of their
Quality Appearance . . .
Quality Construction

With control centers more than with individual starters, the appearance is often very important—frequently the control center is used as a “show” installation. The “Quality” built into Allen-Bradley Control Centers cannot be beat—it is a “plus” value which you obtain without extra cost.

Naturally, the installation of an Allen-Bradley Control Center provides additional values—such as those outlined below.

ADAPTABLE TO PLANT CHANGES—Entire units can be moved or complete sections can be added to meet plant changes without the need for changing the internal wiring of the control center.

GREATER SAFETY—Centralized control and locked operating handles prevent tampering by unauthorized personnel. Panels have “dead front” construction with buses and wiring completely enclosed.

MODERN APPEARANCE—This neat, compact installation eliminates the unsightly supporting structures of individually mounted starters and the numerous conduits between separate starters.

LOWER OVER-ALL COST—A-B Control Centers arrive wired and tested. Installation cost is a fraction of that for individual starters. Standardized units eliminate custom engineering.



With Allen-Bradley plug-in type units, starters can be added or removed from the section without disconnecting the rest of the control center from the line.

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SALT LAKE CITY 10

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SAN DIEGO 1

James A. Setchell, 301 W. “G” St., Tel: BElmont 3-3981

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*McDowell & Craig, Norwalk, chose
12 COLT CO 2046 Clear-Opening
Adjustable Louver Ventilators for
all-year comfort.*

With the hot season here — COLT Ventilation keeps air moving freely, lowers inside temperatures, improves employee morale. Send for a COLT technician. He'll analyze your plant's ventilation problem and present written recommendations, without obligations.

ECONOMICAL! COLT natural Ventilation is always competitive with other quality lines, costs less to maintain, and often costs less to buy.

EFFICIENT! Even in Southern California, COLT Clear-Opening Ventilators get rid of heat fast. They are hand-controlled and require no power.

LOWER! COLT'S low profile, in keeping with modern architectural standards, blends with the attractive silhouettes of newer industrial buildings.

LIGHTER! COLT Ventilators are seven times lighter than galvanized units giving comparable efficiency! No special bracing required!

**WIDE RANGE OF VENTILATORS TO
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FIRE CONTROL

In event of fire, a simple additional feature drops COLT louvers open, lets heat and smoke escape without spreading.

CUT OUT COUPON AND MAIL TODAY

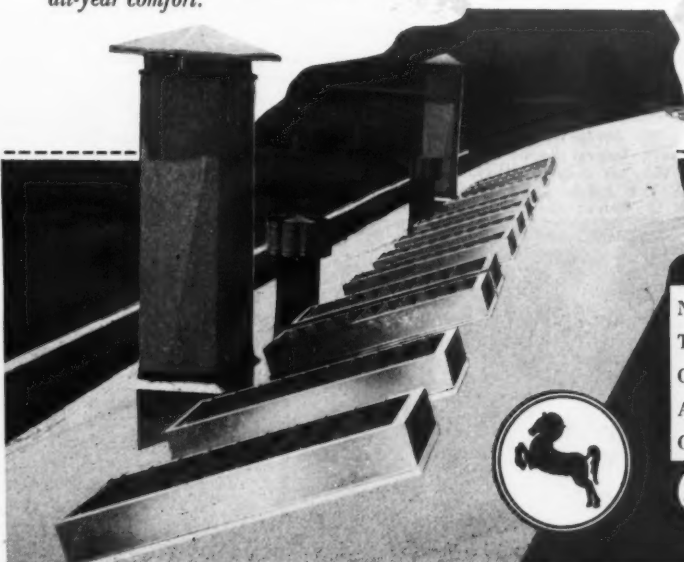
FREE LITERATURE. Yes — I'd like a copy, without obligation, of items checked.

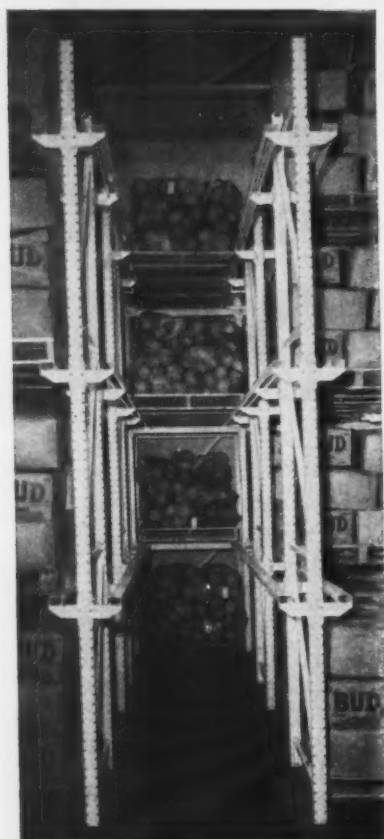
- ☐ TECHNICAL MANUAL describing Colt System
- ☐ "Some Aspects of Fire Prevention in Industrial Buildings", by M. J. Reaney

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TITLE _____
COMPANY _____
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CITY _____ ZONE _____ STATE _____

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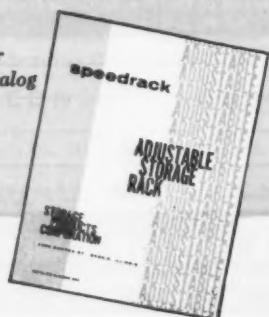


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SIPMHE

"Merger can't take place for a year"

"THE PROPOSED merger between the Society of Industrial Packaging and Materials Handling Engineers and the American Materials Handling Society can't take place for at least another year," Harold A. Kilmer, SIPMHE Western Regional Director, said in a recent exclusive interview with WESTERN INDUSTRY.



HAROLD KILMER
Western Reg. Dir.
SIPMHE

Kilmer attributed the delay to legal complications, but added that the merger proposal will be discussed in detail at the coming National Convention to be held October 13 in Chicago.

Speaking before a Western Regional meeting held in San Francisco August 11, Director Kilmer stressed the importance of keeping individual chapters strong until such time as the merger might take place.

"We've got closer coordination now than ever before," he said, "and now is the time to see that we do everything in our power to let observers see we're worthy of professional status."

All but one of the five SIPMHE regional chapters were represented at the meeting where a

varied range of business was discussed.

It was proposed Western regional chapters adopt similar styles of letterheads for official correspondence, in the hope that it will further the impression that the organization is not a group of unrelated chapters.

There was also a suggestion that chapter elections be held at the same time on a two-year basis, with an installation date arranged to give incoming officers an opportunity to familiarize themselves with the office before assuming it.

It was agreed that each chapter will consider the proposal at separate board meetings and inform director Kilmer prior to October 1, 1958.

Some discussion was also held as to how many regional meetings should be held annually and whether chapters should assume the financial responsibility of seeing they have a representative in attendance.

Kilmer said he planned two such regional meetings annually, usually during a trade show so that too great a financial responsibility would not be placed on individual chapters.

The rest of the meeting was directed toward a discussion of the proposed constitution, copies of which will soon be available for chapter members.

HAPPY SMILES—mark the faces of these men who are planning the 35th meeting of the Southwest section of the International Association of Electrical Inspectors. The meeting will be held Sept. 22-24 at the Disneyland Hotel in Anaheim, Calif. Standing (left to right) E. E. Carlton, Division of Industrial Safety, State of Calif.; T. P. Regas, Bulldog Electric Products; H. A. Duvall, Square D, Co.; James W. Freeman, Sierra Electric; R. J. Walker, Westinghouse Electric Corp.; Martin Luskin, Federal Pacific Electric Co.; Robert Germann, Bulldog Electric Products Co.; Arthur C. Veit, Los Angeles County. Front row (left to right): Barney Alverson, County of San Bernardino; L. E. LaFehr and S. G. Marrocco, City of Riverside; A. J. Hund, City of Anaheim.

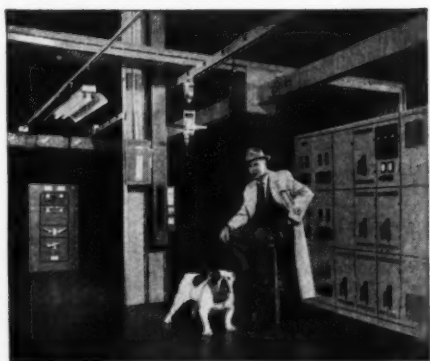


WESTERN INDUSTRY — September 1958

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COORDINATED COMPONENTS. BullDog equipment works together to feed specific industrial, commercial or institutional power needs. Whether it be LO-X®, Plug-In Duct, a substation or a complete distribution system, BullDog can put your business in top electrical shape and keep it there!

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As power goes, so goes production. Recently, an automotive parts plant smoothed major kinks in *both* with an installation of BullDog Plug-In BUsTribution® Duct. Where powering new machines and constant shifting of existing equipment once meant electrical downtime and delay, machines now plug into power in seconds. No rewiring, downtime or costly production halts. And the electrical cost of moving and adding machinery has been slimmed by 47%.

Plug-In Duct is part of a complete *electrical* distribution system engineered by BullDog for capacity, reliability, *flexibility*. Very probably BullDog products can inject new efficiency and economy in your operations, too. Consult the BullDog Field Engineer or your electrical contractor. Or write BullDog Electric Products Company, Detroit 32, Michigan.

BULLDOG



BullDog Electric Products Company, Division of I-T-E Circuit Breaker Company, Detroit 32, Mich. BullDog Export Division: 13 East 40th St., New York 16, N.Y.
In Canada: BullDog Electric Products Co. (Canada) Ltd., 80 Clayson Rd., Toronto 15, Ont.

HEAT BETTER ELECTRICALLY

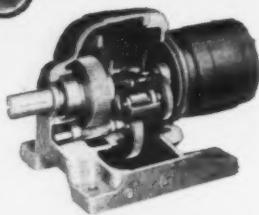
CONSULT THE FOLLOWING PACIFIC COAST REPRESENTATIVES:

COAST ELECTRIC & MANUFACTURING CO.
1733 N.E. Seventh Avenue, P.O. Box 7712
Portland 12, Oregon

YOUNG ELECTRIC & MFG. CO.
2134 Curtis St.
Denver 2, Colorado

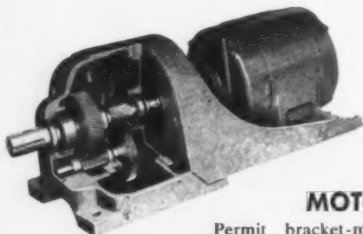
SAFETY SWITCHBOARD COMPANY
910—89th Avenue
Oakland 21, California

BULLDOG ELEC. PROD. CO. OF LOS ANGELES
2885 E. Washington Blvd.
Los Angeles 23, California



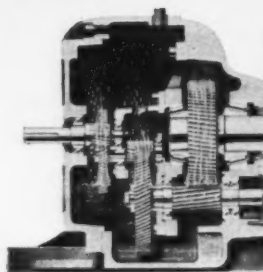
GEARMOTORS

Maintain alignment with flange-mounted NEMA motors. Compact, quiet, oil-tight. Sizes to 100 hp, speeds from 280 down to 1.8 rpm.



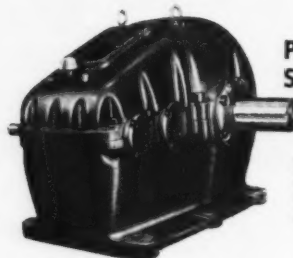
MOTOGEARS

Permit bracket-mounting of foot-type NEMA motors of any manufacture. Sizes up to 100 hp, ratios from 6:21 to 985:1.



IN-LINE HELICAL GEAR SPEED REDUCERS

Speed reductions to your own drive arrangements. Capacities to 206 hp, ratios 6.2:1 to 2217:1.



PARALLEL SHAFT SPEED REDUCERS

For high-capacity, heavy-shock loads. Ratios to more than 300:1 and hp capacities to over 2000.

Whatever you need in power transmission ...

complete

CHAINS AND SPROCKETS



SILENT CHAIN DRIVES

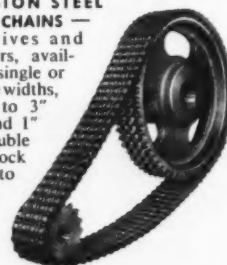
— Ideal for large or small hp, large ratios, high speed and limited space. Maintain better than 98% efficiency. Stock sizes up to 50 hp.



MALLEABLE IRON, PROMAL, STEEL CHAINS — Complete line of cast, combination, forged and fabricated chains plus matching sprockets. Stock sizes.

PRECISION STEEL ROLLER CHAINS

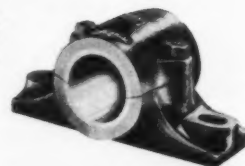
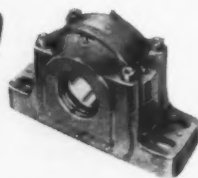
— For drives and conveyors, available in single or multiple widths, in ¼" to 3" pitch and 1" to 3" double pitch. Stock sizes up to 75 hp.



BALL, ROLLER, BABBITTED AND BRONZE BEARINGS



SELF-ALIGNING BALL AND ROLLER BEARINGS adjust to shaft deflection or misalignment, compensate for normal inaccuracies of mounting. In popular shaft sizes up to 11"—pillow blocks, flanged, flanged-cartridge, cartridge and takeup units.



BABBITTED AND BRONZE BEARINGS —Pillow blocks and flanged units are available in 15 different types, solid or split housings, shaft sizes from ½" to 8".

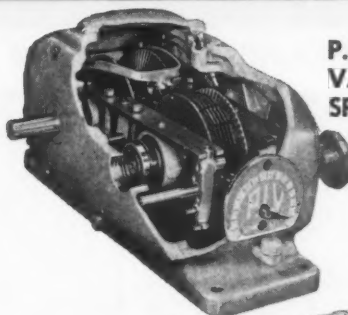
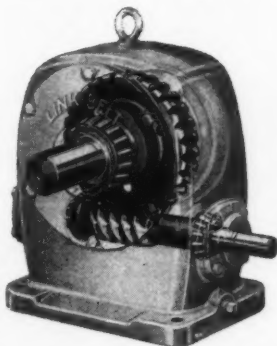


SHAFT-MOUNTED SPEED REDUCERS

Designed to simplify and satisfy the majority of speed reduction jobs. Made in double and triple reductions up to 40 hp.

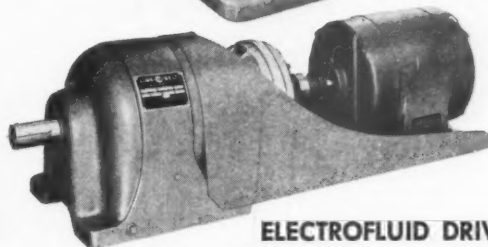
WORM GEAR SPEED REDUCERS

For high reduction with right angle take-off. Made with single, double or helical gear combinations, ratios 3.1:1 to 8000:1.



P.I.V. VARIABLE SPEED DRIVES

Stepless, instant variation through a complete range of speeds. 16 types, 8 sizes from 1/2 to 25 hp and ratios up to 6:1.

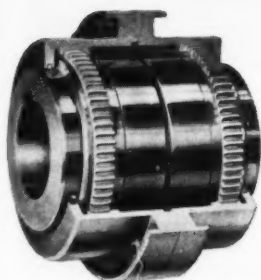


ELECTROFLUID DRIVES

Offer smooth acceleration, overload protection, shock absorption, low starting current, high starting torque without overpowering. Sizes up to 200 hp.

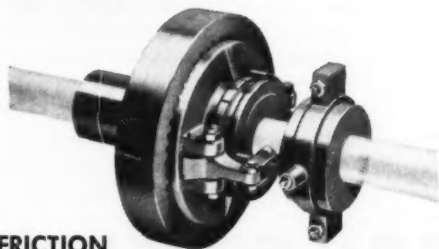
LINK-BELT's complete line gives you

flexibility



COUPLINGS

Flexible, rigid, compression, geared and fluid types available in shaft sizes from 3/16" up to 12", for light or heavy loads, low or high speeds.



FRICTION CLUTCHES

New design, especially suited where smooth, gradual pickup is a requisite. Available in 3 types with capacities up to 170 hp.

FULL FLEXIBILITY is yours when you rely on Link-Belt. Whether you need a single component or a completely engineered drive, Link-Belt can fit your design requirements to a "T."

Link-Belt standards of quality are built into every component—service-proved designs offering longer life . . . efficiency that means *lower-costs*. What's more, pre-integrated designs assure correct mating of all components for smooth-working efficiency—with no elements under- or over-rated.

For complete information and literature, call your nearest Link-Belt office or authorized stock-carrying distributor.

OTHER LINK-BELT PRODUCTS INCLUDE: cut and cast tooth gears; shaft collars in solid or split malleable iron and steel types; backstops to automatically prevent backward movement of conveyors and elevators; gray iron and welded steel pulleys.

LINK-BELT

POWER TRANSMISSION MACHINERY

LINK-BELT COMPANY: To Serve Industry There Are Link-Belt Plants, Sales Offices and Factory Branch Stores at San Francisco 24, Los Angeles 22 (Montebello), Seattle 4. Sales Offices and Factory Branch Stores at Portland 10, Spokane 10, Salt Lake City 1. Stock Carrying Distributors in Principal Areas.

14,031-P

... for more details, circle No. 25 on Reader Service Postcard
See listing in Directory Section

ANOTHER RYERSON PLUS: Inventory Control



"Steel inventory problems? Ryerson solved them..."

You can pass your steel inventory problems on to Ryerson, too. When Ryerson carries your steel inventory, you profit several ways. You reduce your "cost-of-possession" factor . . . increase your material selection flexibility . . . and assure a ready, steady flow of material to meet production needs.

Ryerson will help you plan inventories of such materials as car-

bon, alloy and stainless steels . . . bars, structurals, plates, sheets and tubing . . . aluminum and industrial plastics. With Ryerson as your source, you store and handle only a safe minimum of material to meet your needs.

With Ryerson inventory control

you can make design changes or revise production, with less inventory risk. Ryerson—with strategically located plants and unlimited stocks—stands ready to deliver the exact steel you require when you need it.

A call to the nearby Ryerson plant will bring you the profitable details on how Ryerson can help you with steel inventory problems.



RYERSON STEEL®

Member of the  Steel Family

Principal Products: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing—aluminum, industrial plastics, metal-working machinery, etc.

JOSEPH T. RYERSON & SON, INC., LOS ANGELES—Plant: 4310 E. Bandini Blvd. Mail: Box 3817, Los Angeles 54. Phones: ANgelus 2-6141, from San Diego BElmont 4-7582. SAN FRANCISCO—Plant: 65th & Hollis Sts., Emeryville. Mail: Box 8188, Emeryville, California. Phones: OLYmpic 3-2933, DOuglas 2-4211. Seattle—Plant: 1200 4th Ave., South. Mail: Box 3525, Seattle 24. Phone: MAin 4-2300. SPOKANE—Plant: North 207 Freya St. Mail: Box 2158, Spokane 10. Phone: KEystone 5-1581.

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WESTERN INDUSTRY — September 1958

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MECHANICAL P. T.

Flexible couplings, V - belts, clutches, speed reducers, gearmotors, gears and bearings, etc., are the guts of power transmission. This is their story . . .

THE WEST is growing fast.

People are flooding in by the thousands every month. Industry is bursting at the seams, and accent is on the words—POWER TRANSMISSION.

Without it motors would die . . . production would slow to a halt . . . and the mechanized society in which we live would flounder helplessly.

With power transmission, plants like the Pacific factory of the American Can Co. in San Francisco, throb with life.

Sheet steel with a very thin coating of tin is run through the slitter where it's cut to size and slid into the bodymaker where blanks are notched, formed, edged, bumped and soldered into can bodies.

A flanger puts a flared rim on

both ends of the can body and it's ready for the bottom end to be attached by a double seamer. And the bottom is waiting at the precise instant it's needed.

It's been cut into strips by scroll shears, stamped into ends with curled edges and had a sealing compound automatically applied inside those edges.

With a swish the two are joined and whisked to an automatic tester where the slightest leak means rejection. And they're packed and ready for shipment—at the rate needed to meet the ever growing demands of our economy.

It's a graceful operation.

Cans lithographed in customer-catching colors seem to slide along production lines like a thin, bright ribbon, as they flash through at a rate of up to 450 per

min. in endless streams.

The chatter of motors, drive belts, conveyors, cam-shafts provides an accompaniment. A 5-hp. motor linked to a 2½-in. crankshaft by a V-belt turns five cams. A second crankshaft with seven cams springs to and fro as it operates dies, folding stations and finger bars as the can is propelled through various stations by reciprocal motion.

The can is carried on a grip-chain conveyor to be soldered, flanged and sprayed with lacquer before being run into the ovens for baking. Then it's carried by overhead cables to packing stations.

A simple process?—it sounds that way. And 1,500 employees doing precise production jobs have made it a smooth operation. Also,

power has been so skillfully transmitted to every part of the process that cans seem to produce themselves.

That's why it pays to learn about **flexible couplings**. When you realize the amount of horsepower that goes through a coupling you'll appreciate that the least expensive unit could prove most costly in the long run . . . unless used properly.

There are spline or gear-type couplings designed to handle shaft misalignment far beyond the capacity of conventional flexible couplings. They have less backlash between teeth than other couplings and because of the dihedral shape of their teeth, load is carried at the center point of contact—giving greater strength.

How many times have you struggled with an offset or misaligned motor? Did you know teeth can be cut to accommodate this very problem?

Take motor-driven compressors where the motor has only one bearing.

There's a flexible coupling that supports the weight of the generator rotor while maintaining really close concentricity of the connected shaft at all times. If misalign-

ment occurs the drive remains in balance, and a shorter bed plate allows the generator to be mounted closer to the engine. A safety feature prevents the rotor from dropping on the stator in case of accident.

At Hiller Aircraft Corp., Palo Alto, Calif., automatic safety clutches are used on aircraft to prevent broken transmission shafts on cooling fans when engine rpm. is rapidly increased.

Or take the problem that existed at the Oro Grande plant of Riverside Cement Co. A bottleneck was hindering production because clinkers were produced faster than they could be crushed.

It was agreed that if the crushing capacity of a battery of hammermills could be increased by adding to the number of hammers in each mill, the bottleneck might be broken. But it was found that the inertia mass of the mills was too great for the V-drives and more belts had to be added to prevent slippage.

So far, so good. But by the time enough belts had been added to eliminate slippage, the torque requirement was so high the motors wouldn't start.

Frank Gregg, mechanic at the

Oro Grande plant, called in **Chris McCrie** of Reliable Bearing & Supply Co., who suggested the use of Dodge Flexidyne dry fluid drives because they would allow the motor to start without a load and delay connecting the load drive until the motors were at a high enough speed, producing maximum torque with a low current input.

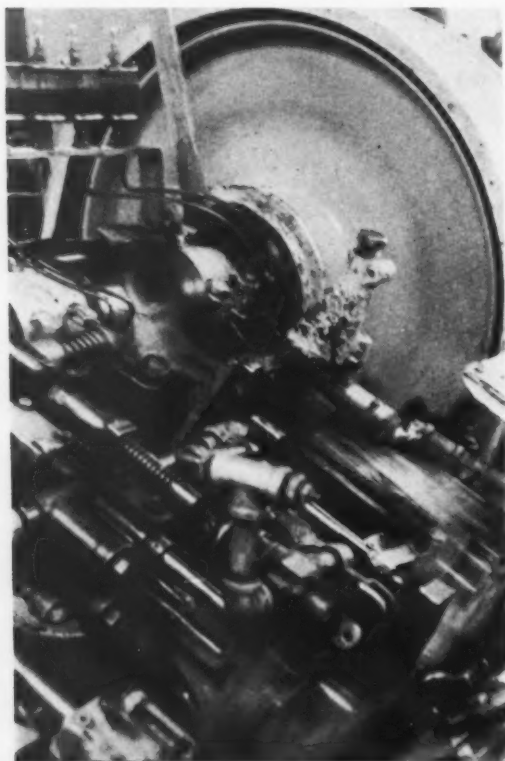
Flexidyne drives were installed on each of the five 20-hp. motors driving the clinker breakers and the mills started without a trace of trouble—and with the original number of belts, too.

But that wasn't all. The feed to the clinker breakers hadn't always been uniform and sometimes it had developed an overload. Now, the new drives provided complete protection against burned-out motors.

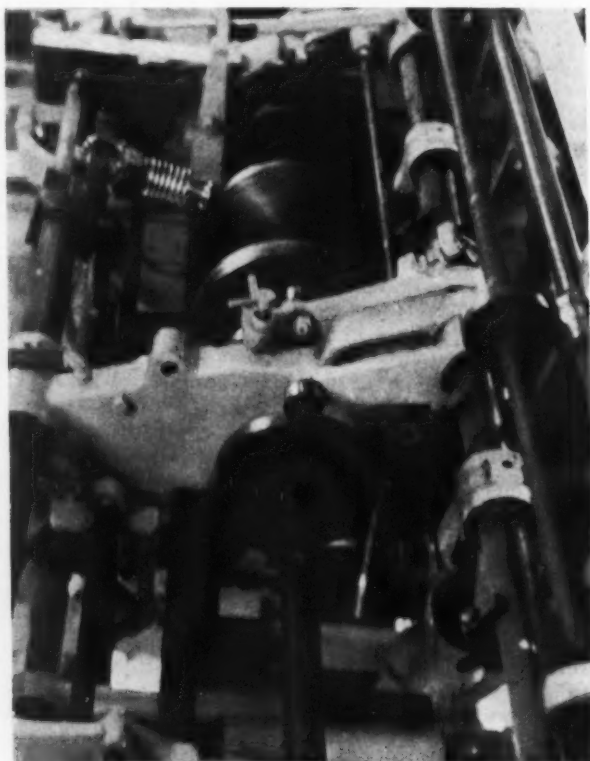
Several months passed.

Frank Gregg watched the clinker breaker working efficiently day after day and started wondering if anything could be done to help in starting the 300 hp. 900 rpm, synchronous motors driving the fans on the air-swept ball mill circuit.

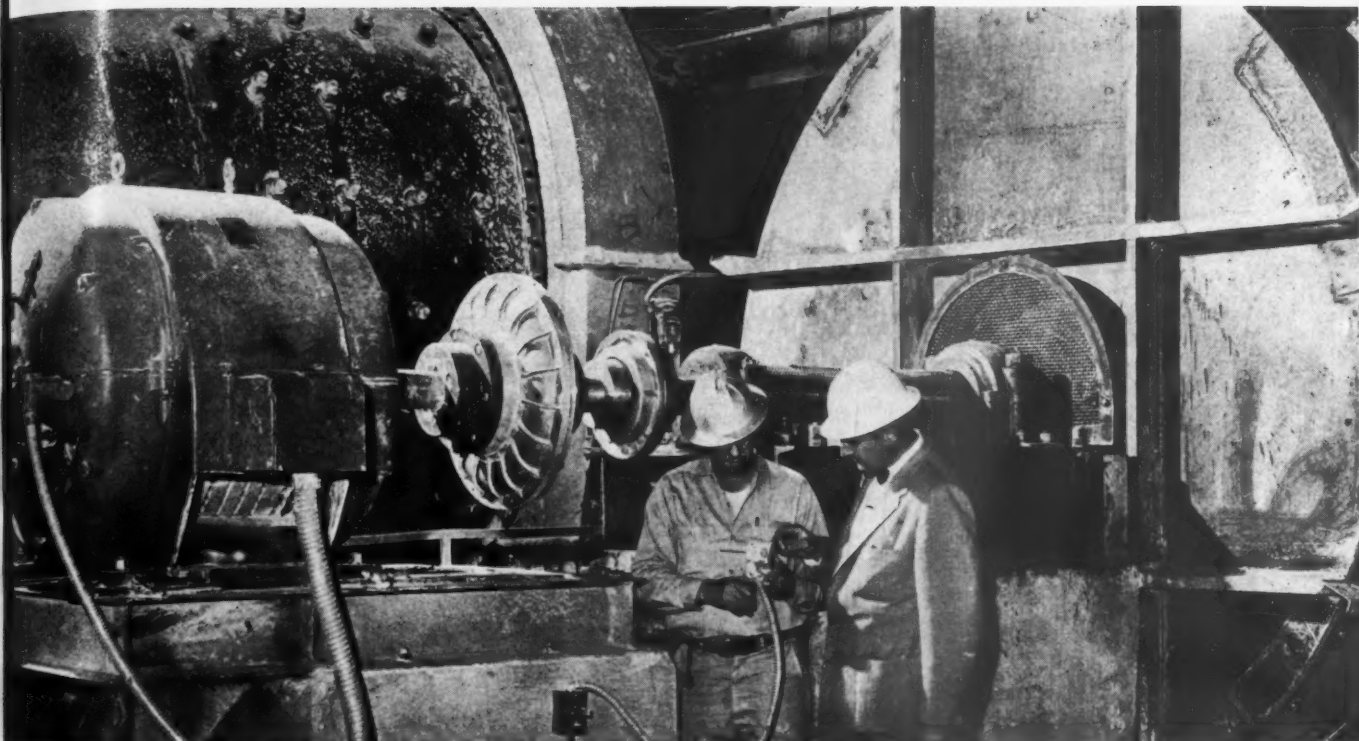
Depending on the temperature of air being handled, it required



MOTION MEANS POWER is being put to work . . .



CAMS ARE MUSCLES of power transmission . . .



CONSTANT CHECKING PAYS OFF . . . especially on a 300-hp. blower drive like the one pictured above.

from 35 to 42 sec. to bring these fans and motors to full speed even though special 170% starting windings were being used in the motors. Every six months motors were burning out—and each rewind job cost from \$3,500 to \$5,000.

The solution came in the form of a No. 27 CK Flexidyne coupling that could pick up the load with the motor at high speed where it could pick up maximum torque at low current input. The fan is now accelerated and the motor goes into synchronous speed in 10 to 12 sec. instead of the 35 to 42 sec. it previously needed.

The entire cost of this conversion, including installation expense, was \$2,300—less than the cost of one rewind job.

At the Products Research Co., Los Angeles, heavy viscous materials were overloading mixers up to 200%—meaning that gears and bearings in the transmission had to be replaced every three months.

The unit, which mixes fuel-tank sealant used on jet-fighter aircraft, works a 24-hr. schedule. Driven by a 25-hp. electric motor, it's connected to a four-speed transmission by V-belts and sheaves. The output shaft of the transmission was connected di-

rectly to the drive shaft of the mixer.

Keeping gears and bearings in the transmission was difficult because of overloading. As regularly as clockwork, every three months, they had to be replaced.

The year was half gone when, in 1956, dry fluid drives were installed. Designed especially to accommodate overloads and shock loads, the rotor of the fluid drive is free to turn concentrically in the housing. Fine particles of spherical steel shot are between rotor and housing. This flow charge, acting very much like a fluid, is the medium through which power is transmitted from the housing to the rotor.

Torque capacity can be varied by changing the quantity of steel shot. And as the drive can be set to slip from 30% over the required starting torque to as high as peak motor torque, overloading can be accurately controlled.

During starting and overload periods, the current drawn is at a minimum because with the standard drive setting the motor is never pulled down to less than 90% of synchronous speed. This means that when overloading does occur, before damage is caused the rotor slips, overcoming friction and wedging the action of the

flow charge.

If overloading persists, there's a thermal switch which automatically cuts the electric load.

A similar, but not identical, problem was faced by the Helipot Division of the Beckman Instrument Co., at Newport Beach, Calif.

They wanted a mechanical variable speed reducer that was small enough to fit under a conveyor without taking additional floor space. It was vital that the unit have the capacity of taking any one speed at the input shaft, while delivering infinitely variable speeds from the output shaft.

In addition, the company wanted to be able to instantly change the speed of their conveyor operations at any time, yet retain a positive drive with constant torque throughout all speed ranges.

They found what they needed in a compact variable speed unit manufactured by Revco Inc., Minneapolis, Minn.

And because it's able to accommodate speeds between 400 rpm. and zero, it can be used as clutch.

Here's how it works . . .

By changing the distance that four sets of mechanical links push

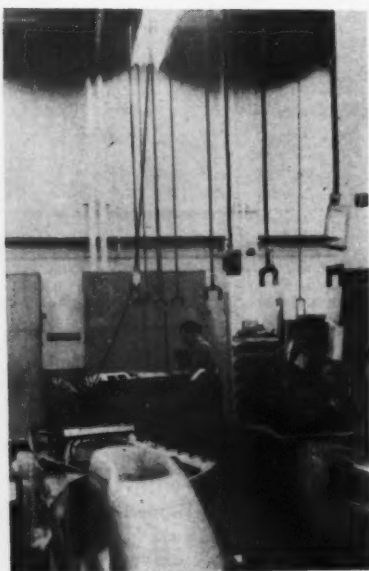
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AIR POWER

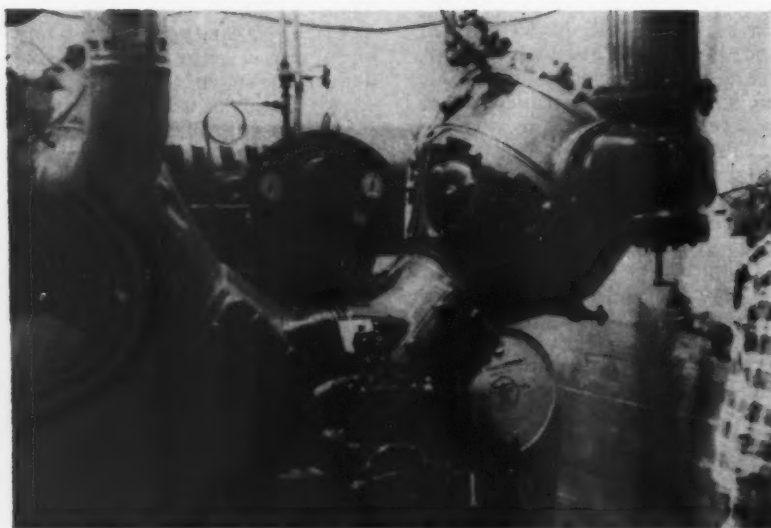
How, where, when and why you should use air power . . . added to the latest facts on compressors, valves, couplings, etc. . . . makes for profitable reading.



PRECISION DRILLING . . .



BENCH PRODUCTION WORK . . .



THROB WITH LIFE because of compressors like these.

WITHIN the sound of aircraft landing and taking-off at San Francisco's International Airport stands one of the largest maintenance bases in the world.

Many of its operations depend on air power.

United Air Lines' spanking new building is spread out over 9 acres, with the smooth kind of compacted efficiency that handles as many as 15 airplanes for complete overhaul at the same time.

Inside, in air-conditioned, dust-free workshops, 5,000 employees smoothly turn the hundreds of cogs that make the entire operation run without a hitch.

Through it all pulses air.

Throbbing heart of the operation is three Joy 2-stage, 125 hp. vertical V compressors which operate at 800 cfm. On line 8 hrs. a day, all cycling at the same time, this represents approximately 420,980,000 cfm. annually—which is a lot of air—any way you look at it.

Steel distribution lines, 6 in. at the compressor, narrow through 4 in. and 2½ ins. to carry the invisible power to ½-in. outlets at work benches.

By the time it reaches work points the air pressure is 100 lb. per sq. in. at ambient temperatures. Pressure regulation and cooling is done at the compressors.

Even though there is a separation of 800 ft. at the furthest point between compressor and point of use, there is less than a 5-lb. drop in pressure at the outlet point.

"A drop in pressure of that amount," said **Denver W. Brooks**, facilities engineer, "is unimportant in our kind of operation. We don't even use a filtering system," he added, "because down-

time from rust particles in the lines is so small it wouldn't constitute a danger."

But seeing that the right pipe sizes lead to heavy and low work load areas is important. Heavier load areas at United Air Lines are supplied by 4-in. pipe and outlets are increased to $\frac{3}{4}$ in. to allow attachments of tools capable of using higher pressures.

Permissible air-drop in average compressor operations is 10%. Sometimes it creeps below that point when a single pipe instead of an air-loop system is used. Then compressors have to be attached to both ends of the line to maintain constant pressure throughout.

In the same way limits are set on the practical air hose length at the point of air consumption at work benches. "Although we haven't been worried by loss of pressure through using these rubber hose connections," Denver Brooks says, "we have found that three and four-ft. lengths are most easily kept from cluttering work benches."

Maintenance presents very little problem, either.

Despite the West's humidity along the coast, by running a little oil through the system rust is kept at a minimum.

In Utah a different compressor operation is at work at U. S. Steel's Columbia-Geneva Steel Division in Geneva.

America's largest electric-driven reciprocating compressors are busy handling air for ammonia oxidation.

Two ten-cylinder, 6,000 hp. Ingersoll-Rand HHE compressors—the first units of such size ever put in operation—are part of an operation which employs almost 20,000 hp. from both reciprocating and centrifugal compressors.

In building such giants, it's vital that proper compressor cylinders be used. They have to suit the volume, pressures and gases involved. They must be arranged on the frame in the best sequence and the crankshaft must have smooth torque and gas flow—as well as perfect balance.

There's no difference between these 6,000 hp. units in Utah and the smaller models in use at Boeing Airplane Co. in Seattle, Wash. . . . they're both designed to produce air where, and when it's wanted, in the quantities wanted.

At Geneva the 6,000 hp. units simultaneously compress coke-oven gas in two stages to 200

psi., and synthesized gas in three stages to 5,300 psi. Two 2,000 hp HHE's are employed in the same operation to compress oil-free air to 80 psi., and nitrogen in 4 stages to 2,800 psi. The air cylinders used are among the largest non-lubricated cylinders ever built.

But air compression isn't limited to the massive proportions of the steel world.

At the Heidrich-Nourse Co., Los Angeles, impact machines are manufactured for stamping, riveting, etc. Airmatic foot valves allow the operator to have both hands free while concentrating on

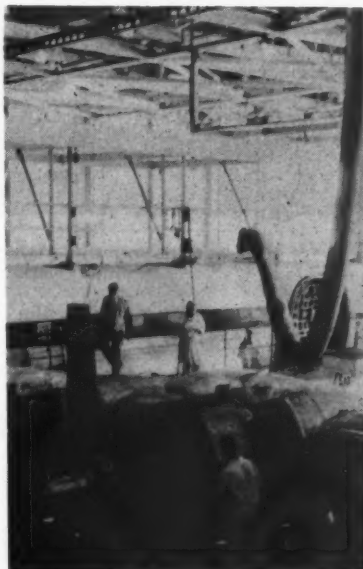
the production operation . . . and these valves are pneumatic.

Similarly, at the Pacific Scientific Co., Bell Gardens, Calif., air operated four-way foot treadle valves are in use on the company's furnaces.

Where straight line actuation is needed, there's a new ball cam actuated manual valve designed for operation by any mechanism having linear motion.

Intended for use on press controls, the valve features a $\frac{3}{4}$ -in. diameter hardened stainless steel

. . . continued on p. 54



"VENTILATING PRODUCTION . . .



OVERHEAD PAINT SPRAYING . . .



ARE MADE EASIER AND MORE EFFICIENT by using air power," says Denver Brooks, United Air Lines facilities engineer.



OVER 5 MILES OF HYDRAULIC TUBING went into automating the Mercury-Edsel plant in Los Angeles.

HYDRAULICS

Power at your fingertips by just learning the proper use of pumps, cylinders, valves and gages. Read how others have profited.

HYDRAULICS . . . the science relating to the flow of fluids.

In the West hydraulics is synonymous with rapid industrial growth.

Take the car you ride in—if it's a Mercury or an Edsel chances are it was assembled at the Mercury-Edsel plant in Los Angeles where over five miles of hydraulic tubing, 10,000 fittings, 2,000 valves and cylinders, and 50 power units form one of the most automated production patterns in industry.

The hydraulic installations for the Mercury-Edsel plant were designed and installed by The Rucker Co., Oakland, Calif. "With hydraulic units," Clarence J. Wood-

ard, vice-president and general manager, said, "we were able to provide definitely controlled power in smaller packages."

When the Dura Vent Corp., manufacturer of heating vent equipment, needed power units to control two separate identical machines which dimple flue pipe at four points simultaneously, engineers were called in to solve the problem. The result was a special hydraulic power unit complete with valve panel and electric controls which, on the touch of a button, automatically dimples 20 pipes a minute.

Major components include a fixed volume pump rated at 15.2

gpm., 1800 rpm., directly coupled to a 15 hp. open, drip-proof electric motor. Auxiliary components include hand valves and gage, accumulator, and a suction filter. Cylinder operation is controlled by flow control valves.

Which goes to show that a lot of precision engineered parts go into the fabrication of hydraulic power units. Let's take a look at some of them installed in Western plants:

The Tri-Clad '55 a-c. electric motor is one method of driving the pump in a new hydraulic power unit. It fits on the end shield of the motors permitting the installation of almost any flange-mount-

ed hydraulic pump directly.

The adapter's open construction eliminates hard-to-maintain internal splines, and auxiliary sheaves can be used with the couplings and adapter since sufficient clearance is provided.

Because of its cast iron construction the motor can be used in chemical and corrosive atmosphere and since only the pump—rather than the pump and motor—has to be lined up, cheaper installations are possible.

Many Western plants have converted existing air equipment to hydraulic use with a low pressure pumping unit manufactured by the Genesee Machine Builders, Inc., Rochester, N. Y.

The unit, complete with motor, adjustable relief valve, pressure gage, oil level gage and piped return, minimizes oil cooling and leakage problems and affords the use of inexpensive fittings, pipe or hose.

It's especially useful for pressure testing devices or wherever linear or rotary motions are required.

However, the motor is only a part of the total hydraulic picture. There are many other parts, each playing a vital role in the ultimate transmission of power.

Valves are particularly important.

Lift trucks, stackers, grabs, floor sweepers and a host of other time and money saving equipment depend on efficient valves for oil-hydraulic control.

Top priority is given to valves which allow the operator complete control at all times. When changing operating positions or even when power is cut off, the load should be held securely in position. In hollow plunger valves this is made possible by a check valve (built into the hollow valve plunger) that holds oil in the cylinder circuit until pressure is built up sufficiently to move the load.

At the same time, by a gradual introduction of oil through staggered cylinder parts, the operator is given hairline control. A large movement of the control lever (and plunger) results in a relatively small initial opening of the cylinder ports and a gradual closing of the bypass through the valve. In this way pressure is built up without jerky operation.

The accompanying sketches show how valves can provide such accurate throttling. Figure A has the valve in neutral position with

oil flowing through the oil bypass but not entering the cylinder

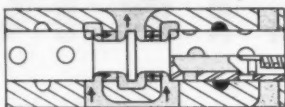


Figure A



Figure B



Figure C

ports. In figure B, the operator has moved the lever forward, causing the cylinder ports to open slightly and the bypass to begin closing. Pressure is building up gradually. The operator has moved the lever further in figure C. The bypass is shut off entirely and all oil is flowing into the completely opened cylinder ports. The pressure opens the check valves and allows oil to flow to the cylinder. (Notice that pressure is not sufficient to move the check valve in figures A and B). In the sketches the dark areas represent high pressure, and light areas low pressure.

It is important that in moving a valve plunger, the operator never hits a dead spot, so, as the plunger position is changed there is never any back pressure built up in the pump circuit. There's always a continuous flow of oil either through the valve or to the cylinder.

Try it on your fork lift. Raise the load, stop and then resume raising. Notice that throughout these operations there's one flowing movement. If the load drops, even a fraction of an inch, you've got a faulty valve and had better start looking for trouble.

The Lenkurt Electric Co., Redwood City, Calif., has installed a 154-ton press with automatic dial feed mechanism and an operation that's completely automated through a hydraulic control system. Its function is to manufacture non-magnetic transformer coils. One of the most vital major components was hydraulic control valves since the most minute pressure fluctuation could not be tolerated in this process.

But not all hydraulic setting mechanism is limited to delicate operations. At the Riverside Cement Co., Los Angeles, one of the largest cement crushers in the industry uses a Hydroset, with pushbutton control permitting accurate and virtually instantaneous control of the discharge setting.

Hydraulic power is probably the only way this giant gyratory crusher—designed to receive quarried limestone feed up to 5 ft. in diameter and reduce it to a minus 8-in. product at the rate of up to 2000 tons per hour—could be controlled by finger-tip action.

Cylinders play an extremely vital part in the successful operation of any hydraulic operation.

In past years telescopic cylinders have played an increasingly

... continued on p. 50



"PRECISION POWER WHEN YOU WANT IT," is the way Clarence Woodward, vice-president of a Western equipment firm, describes hydraulics.

ELECTRICITY

Generators, motors, controls, cables, connectors, switches, etc., are basic but profitable units you should know how to use.

A NEW SURGE of power flooded along Western power lines as the Poe powerhouse, a 106,000 kw. addition to Pacific Gas and Electric Company's hydroelectric system on the Feather River, hummed into life recently.

Poe is one of three new hydro-

electric generating plants to be completed this year on Feather's North Fork, together representing an \$80,000,000 expansion bringing PG&E's capacity of the Feather River system to 635,800 kw. in nine powerhouses.

What's this to do with electrical power?

Just this.

It demonstrates the aching appetite of Western industries for more electricity. A flood of new industries has rocketed consumption to a stage previously unimaginable. Today, one plant uses more electrical power per annum than the entire city of Oakland.

That plant?—the Shell Chemical Corp., in Pittsburg, Calif. It digests over 150,000,000 kw. hours annually.

Concerned with the production of synthetic ammonia, Shell cracks natural gas to produce hydrogen, at the same time using a low temperature process to separate nitrogen from the air. Hydrogen and nitrogen are combined by catalytic action resulting in ammonia.

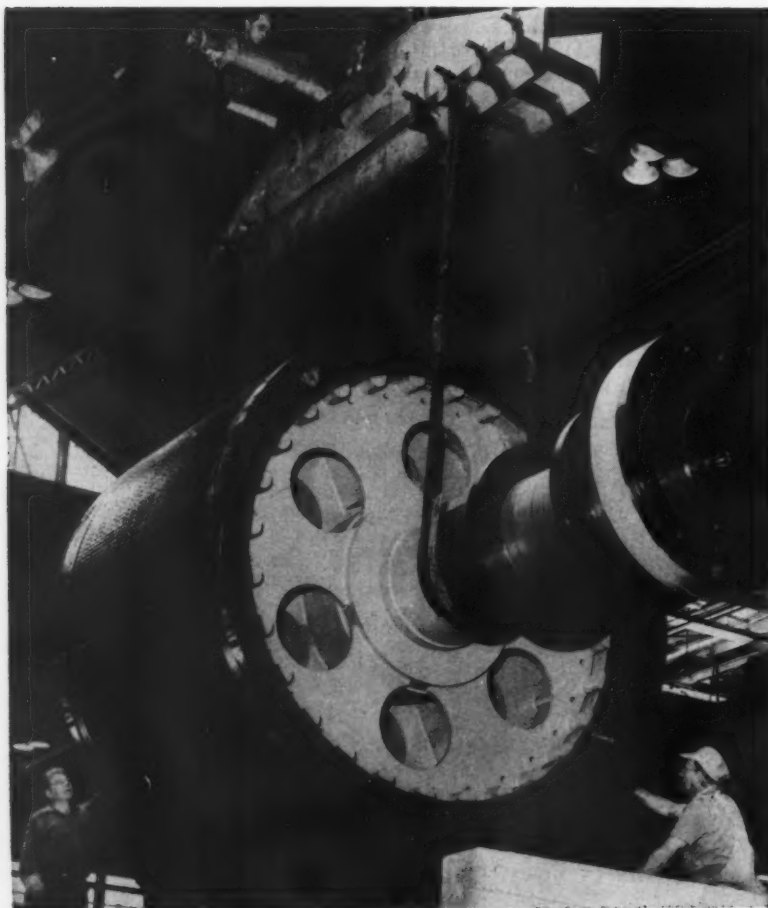
Where's electrical power used?

To maintain pressure throughout the process.

Electrical energy is supplied to the plant substation at 60,000-volt, 3-phase on two main feeders from the PG&E system. Either feeder is capable of carrying the entire plant load at full production rates. It is transformed to 2,400-v. 3-phase utilization voltage through two banks of transformers rated 10,800 kva. each.

Each bank serves a group of metal-clad switchgear, within the main switch house adjoining the substation, by way of overhead tubular bus. The two groups of switchgear consist of electrically operated air circuit breakers for branch circuit protection on power distribution feeders throughout the plant and control units for nearly 20,000 hp. in synchronous motors driving compressors in an adjacent building.

Included in the switch house are facilities for metering the total energy consumed in the plant



THIS 98,700-LB. ROTOR is being readied by General Electric Co. as part of a \$5½ million shipment of electrical apparatus to help boost Western industry.

and by each unit separately. In addition, a bank of batteries is maintained as a power source for operation of all switchgear within the building, and two motor generator sets are provided as a source of direct current for field excitation on the synchronous motors.

Power is distributed throughout the plant at 2,400-v. 3-phase by means of lead sheath cable in underground ducts and manholes. Three looped primary circuits are used.

One end of each loop originates at one group of switchgear at the main switch house. The opposite end is fed from the other group to facilitate service continuity to all locations during outage periods on one or other of the transformer banks.

Normally, these feeders are open-circuited midway in the loops for better load balance on the two power sources and to reduce potential short-circuit contributions to a minimum. The primary cabling is terminated at a number of outdoor load centers strategically located in process and maintenance areas.

Each load center is comprised of a primary cubicle, a bank of three single-phase transformers ranging in size from 150 kva to 600 kva per bank, and a secondary cubicle.

The primary cubicle consists of 2,400-v. 3-phase bus . . . compartments with incoming feeder isolating switches . . . and fused disconnects protecting branch feeders which serve large motors within the area.

The transformer bank is connected delta-delta and transforms electric power from 2,400-v. to 480-v., 3-phase, for smaller increments. The secondary cubicle contains a main circuit breaker, enclosed 480-v., 3-phase bus, and a panel of branch feeder breakers for service to nearby buildings and motor control centers in the area. Facilities are provided in a secondary cubicle for metering the total secondary load as well as individual branch feeders.

Lighting service throughout the plant is provided by dry-type, single-phase, 480-v. to 120/240-v. transformers located in each building and control center.

That's how one plant distributes its electrical power—an operation that is buzzing 24 hours a day, seven days a week.

But installations in Western plants vary . . . just as genera-

tors vary.

Take the revolving type—one or three phase units. They range from 20 to 100 kw. and from 50 to 60 cycles.

The 100 kw. 3-phase alternator of one type has a welded steel bar frame, heavily ribbed cast end-bells, and additional features which add up to a compact, sturdy machine. Two center mounting feet assure equal distribution of weight and permit accuracy and ease of alignment of generator to any industrial engine.

A simple construction?

Yes, and it's this simplicity which causes standard electric motors and generators to be so widely used in Western industry.

But the Portland General Electric Co. wanted more than just ordinary generators to service a populous 2,700-sq. mi. area in Oregon. To satisfy their needs three identical 19,200-kw. hydro-electric generators, largest machines ever built in the West, are under construction at the Westinghouse Sunnyvale division. When completed each machine will weigh 235 tons and will produce electric power at 13,800 v.

And yet the same principle is involved as that in the smallest electric generators. That's how basic electric power is.

And the uses to which they can be put are expanding.

Take the case of motors designed for use under water.

Wet motors use a new insulating system using irradiated polyethylene or silicone. Primary advantage in pumping applications is in high pressure boiler circulation uses, since the need for a pump seal is eliminated. Water from the pump is permitted to circulate through the internal electrical and mechanical components of the motor.

A standard pump seal might have to withstand pressure up to 3,000 lb. per sq. in., but the wet motor functions efficiently in water under this pressure.

Motors of 250 and 350 hp. are currently being produced for boiler circulating pump applications.

Adverse weather conditions are one reason why electric motors might fail. Another is by overloading—and it's easy to do.

A sudden jolt can not only wreck a motor . . . if the motor's being used on an overhead crane,



"KEEP AN EYE ON CONTROLS," says Len Bardsley, engineer at Shell Chemical Corp.'s plant in Pittsburg, Calif.

it can set the load swinging . . . which is dangerous.

To prevent this and to cushion start and stop on electric motors, there is a special motor brake which spreads the time lapse from start to full bridge speed to a maximum of 3½ sec.

The brake operates through centrifugal force and is set when the motor is stopped. As the motor speeds up, the brake gradually releases and is completely open at 40% of rated motor speed. In stopping it closes gradually as the motor slows.

And there's an electrical control device which makes it possible to stop an over-loaded electrical motor during the critical peak or starting load period.

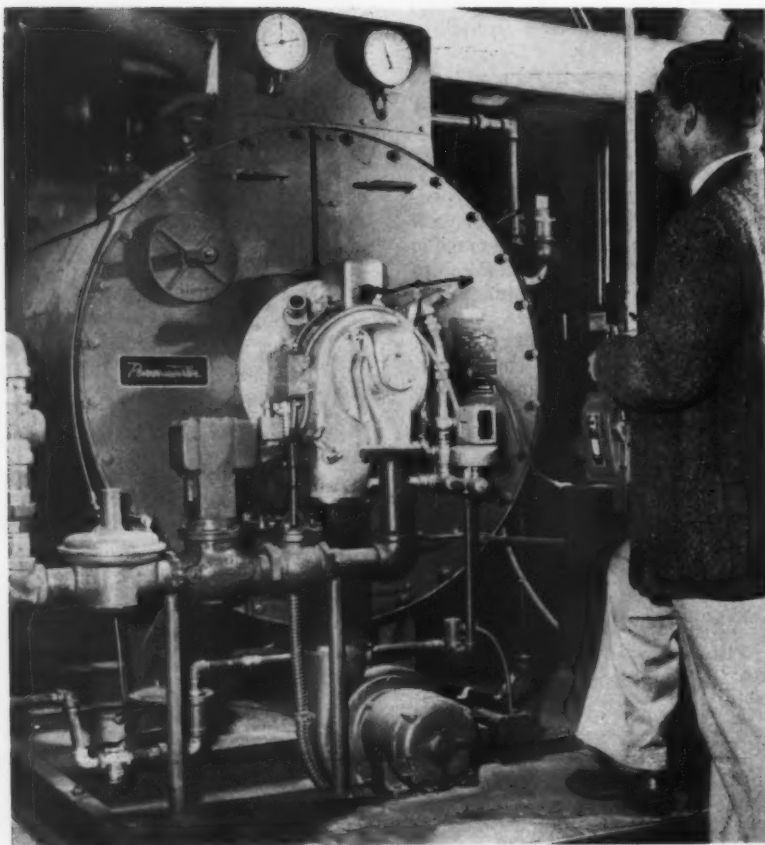
Action of the unit is controlled by a limited pointer which can be reset very close to the actual normal electric power required by the drive, and, by touching a button, it can be reset as instantly as it cuts off electrical current to the drive involved.

Smooth acceleration and deceleration are important when considering drive mechanisms. Tyson Mill Creek Co., Santa, Idaho, has used a 30-hp. electric carriage

. . . continued on p. 48

STEAM POWER

Decentralization, the move from large boilers to smaller ones, has added efficiency to Western production.



GAGES ARE IMPORTANT guides wherever steam power is used.

THERE'S MORE than hot air in steam—there's power. And with Western industry getting bigger by the minute, power is important.

You thought steam power went out with the last of the wood-fired locomotives that chugged across the Indian infested plains?

It didn't.

In recent years there's been a move toward decentralization in industrial application of steam and hot water generating equipment. Simply, this means that small-to-medium-sized boilers have been placed near the machine for which

they provide power, instead of having to depend on a single generating plant from which steam is piped to different plant areas or equipment.

Lockheed Aircraft Corp.'s missile systems division at Sunnyvale, Calif., has been particularly interested in decentralization, because it means boilers can be located in spots where they don't reduce productive floor space.

Here six gas-fired hot-water packaged automatic boilers serve four separate buildings. They are mounted on top of washrooms where they are supported on 6-in.

concrete cells. Operating at water temperatures between 180 deg. F. and 212 deg. F. to keep office and work areas at 70 deg. F., the boilers use 1,100 Btu. cu. ft. natural gas furnished at 1 psi., as fuel.

They are operated four to six hours a day, seven days a week. One 50 hp., four 60 hp. and one 100 hp. boilers comprise the installation. They have proved so satisfactory that **Curtis T. Nessler**, construction engineer in the Lockheed plant engineering department, has made a special report about his complete satisfaction with the Orr & Sembover Power-master boilers.

The trend toward decentralization of steam power is based on sound reasoning . . .

High quality packaged boilers, economical to operate, are now available. They require no expensive foundations and can be spotted around the plant close to areas they serve.

The piping network is greatly reduced in length and complexity, which is important in plants of one story, covering large areas, where delivery of steam to the point of use may require networks of piping and return lines running into miles.

With shorter transmission lines there's no need to bring steam to an artificially high temperature to counteract transmission losses. And maintenance costs are cut because there's less pipe to maintain.

Decentralized packaged units are real money savers in plants where differing steam pressure requirements are needed in different parts of the plant. One process in a certain area may require 3,500 lbs. of steam per hr. at 15 psi.; another 14,000 lbs. at 100 psi.

The most compact boilers made, with 150 bhp. (5,000,000 Btu. per hr.), occupy only 40 sq.-ft. That means boiler rooms can be 9 x 12 ft. or smaller.

And when it's ready for use, who uses steam and for what?

The Borden Food Co., in Oakland, Calif., for processing cheese . . . the Oakland Overall Laundry in wash wheels and presses . . . the Lockheed Aircraft Corp., Burbank, Calif., for sealants and production line work . . . C & H Sugar Co., Crockett, Calif., in over-all production processes.

And a host of others.

No sir, steam is still very much at work—and you may be missing a chance of adding it to your production team.

A PLANT ENGINEERING dream come true: the opportunity to design, build, and tool its own operating facilities.

It's an opportunity that few plant engineering departments have enjoyed. But it happened recently at the Nortronics Division of Northrop Aircraft, Inc., Anaheim, Calif.

Tom Hardgrove, Nortronic's chief plant engineer, comments: **"More often than not, the plant engineer and his staff are forced to occupy any space that happens to be available, whether or not this space is conveniently located and suited to departmental requirements. We wanted, above all, to avoid the many inconveniences and lack of departmental unity which so often exists under such unplanned conditions."**

The Plant Engineering Department at Nortronics averages about 85 employees. It is divided into five different sections, or working groups. The sections are: (1) **Planning and Property control**, which maintains all records, plans maintenance systematically, and accounts for all property in the plant. (2) **Engineering**, which accomplishes all the design, layout, and drafting work required by the department. (3) **Plant Maintenance**, which takes care of all janitorial work, carpentry, painting, etc. (4) **Mechanical Maintenance**, which maintains all machine tools and other mechanical equipment. And (5) **Electrical Maintenance**.

In planning the new building, it was desired to give each of these sections separate work space and a degree of autonomy, but not at the expense of over-all departmental unity and cooperation.

After due consideration of all problems involved, a pre-engineered metal building containing 8,000 sq. ft. of floor space was decided upon. The site selected was toward the rear of the plant, midway between the two large production buildings in which most of plant engineering's activity takes place. Galvanized steel panels were used for the building's walls.

The roof was laid with aluminum paneling because of this metal's superior reflectivity. At the time of building, a slab was laid at the rear to serve as the floor of a raw materials storage shed. This slab will eventually be covered with a shed roof.

Another slab was laid alongside

BUILDING CHALLENGE

Plant engineers were challenged to build facilities that were a model of efficiency—their own quarters.

the building to contain a water-wash paint booth, which was subsequently moved into place intact and fitted against a hole left in the side of the building. A 14-ft. floor clearance was maintained throughout the building proper so that if it is ever desired to use the building as a production facility, ample clearance will exist.

The finished building has three main divisions—a separate stock room and tool storage area, office space, and a shop. The office space, approximately 1,900 sq. ft. in size, runs part way along the front end of the building, with the shop space folded in a large L-shape around it.

The Planning and Property Control and Engineering sections, as well as the Plant Engineer's office, are located here. The office division is completely air-conditioned, and contains indirect fluorescent lighting which delivers approximately 120 foot-candles of useable illumination at working level. Modular paneling in the Engineering area provides privacy for those who need it.

Offices of the three foremen—electrical, plant maintenance, and mechanical maintenance—are also located in the general office area,

but are paneled off from the remainder of the office by glass and plywood panels. It is not possible to enter these three offices from the general office side. Instead, a door leads outward from each office into the specific shop area over which the foreman has charge.

Interior windows in these offices permit each shop foreman to keep in visual contact with the shop area over which he has control. Thus, while each foreman is provided with the quiet and privacy inherent in the general office atmosphere, he is physically and visually in direct contact with his shop area at all times.

The short leg of the L-shaped shop space contains the machine tool repair shop. The long leg contains the carpentry, plumbing, sheet metal, welding, and electrical shop areas, as well as the built-in water-wash paint booth. These areas are marked only by the tooling they contain as no panel divisions are used.

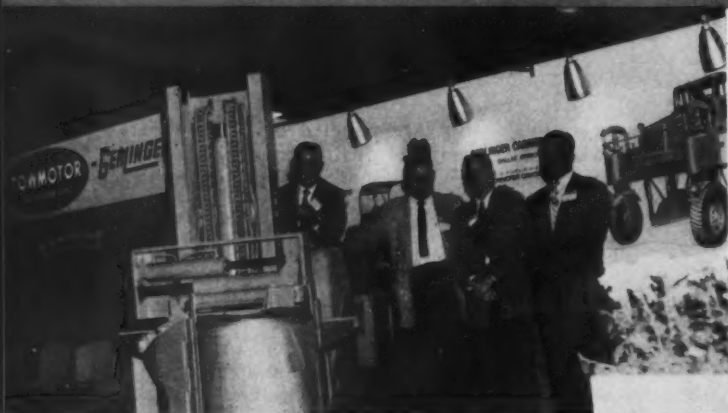
Though air conditioning in the true sense of the word is not used in the shop area, several ceiling-

... continued on p. 52



PLANT ENGINEERING designed and built is this building at Nortronics, a division of Northrop Aircraft, Anaheim, Calif. **Tom Hardgrove**, chief plant engineer, stands at right, with **Hal Duffey**, property control supervisor, in the left foreground.

M-H and Packaging Show



Walter O'Brien, Oakland branch manager; Alfred H. Roth, sales promotion and advertising manager; Thomas A. Fitch, president of Irving G. King & Co. (agents) display latest models at the Towmotor-Gerlinger booth.



Ann Barnes lends a helping hand to her Dad, Marshall, as he stitches bags at the Bemis Bros. Bag Co. booth. Ann and her sister, Jane, handed these bags to visitors.



Donald A. Yeo, district manager; Fred Stultz, San Jose branch manager for T. R. Mantes Co. (agents); Dave O'Neil, T. R. Mantes Co., stand guard at the Martin-Decker Corp. booth. Howard D. Ahlborn, adv. manager, has just stepped out.



The boys at Hamerslag Equipment Co. pose (left to right): Neil Chaitin, sales engineer; Ogden Kiesel, sales engineer; Jay P. Hamerslag, president; Peter Oakland, Santa Clara sales office; Harlan Roth, sales engineer.



Here's U.S.S. Gerrard's Model 12 automatic round steel strapping machine in action. Its features: low cost, compactness, ease of operation. That's Martin W. Allred, sales representative, at the controls.

As you can see, one of the center attractions was new Zellerbach Paper Co. tape, made with twisted kraft adhered together on a flat surface. It's sealed with glue. Dolph Timmerman is busy giving a demonstration.



It must be a success. . . . Maybe it's the Ply-Veneer they're demonstrating. Left to right: Richard B. Cambridge, Sierra Skyline Lumber; James F. Bell, Weyerhaeuser Sales; Wm. W. Brinkley, Weyerhaeuser Sales (S. F.)



Folding cartons and containers to solve your packaging problems were featured at the Flintkote Co. booth. Ready to lend a helping hand were (left to right): Richard O. Welch, Marshall J. Miller, and John C. Randall.



Pictorial Review



Ever alert, the Rapistan of Calif., boys held onto a customer while being photographed. Left to right: **Thomas P. McCrea**, sales engineer; **Hardin Maxwell**, general manager; **Gene Keiser**, sales engineer.



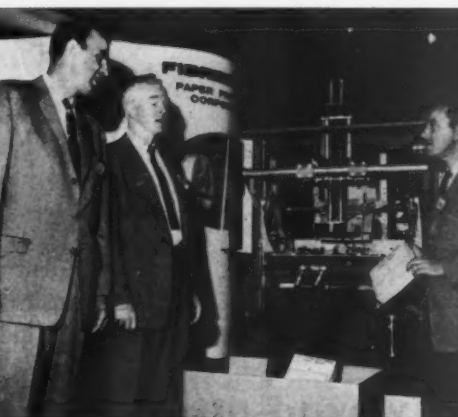
A sensation at the show was the new A4 fully powered pneumatic steelstrapper at the Acme Steel Co. booth. **Joe R. Roberts**, sales engineer, attracts a crowd as he operates the machine.



O. L. Jenkins, president, and **Harry D. Miller**, sales engineer of E. C. Buehrer Associates, proudly showed off Automatic Transportation Co. equipment at their booth. Other lines displayed were Nutting floor trucks and casters.



Mighty cheerful were "**Teeb**" **Thomas**, sales engineer, and **Jack R. Smolenske**, advertising manager, as they talked up their cloth, wire baskets, and wire slings (made at the new CF&I wire sling shop in San Leandro).



Presto . . . and a new Fibreboard paper container is made by a carton-making machine. Pointing with pride are (left to right): **Woody Duryea**, sales representative; **Norman T. Burke**, manager, frozen food sales; **A. L. Roth**, packaging equipment engineer.



Action . . . and a show worth seeing . . . were keynotes at the **Ira G. Parin Co.** booth. Here you see just part of the show—an Elwell-Parker latest model fork truck swinging into action. Displays of other equipment were also on stage.

Metal-edged jewel boxes were made to order at the booth of the National Metal Edge Box Co. Did you get yours? On the production line were **William E. Welter**, packaging engineer; and (standing) **Ralph A. Branca**, manager.



Real big wheels were at this booth. Among them was the Disogrin, a wheel that has the best features of both rubber and steel. Proudly displaying the Disogrin were **R. N. Speiser** (left) of Disogrin, and **Bob Craig**, of Yale & Towne Mfg. Co.





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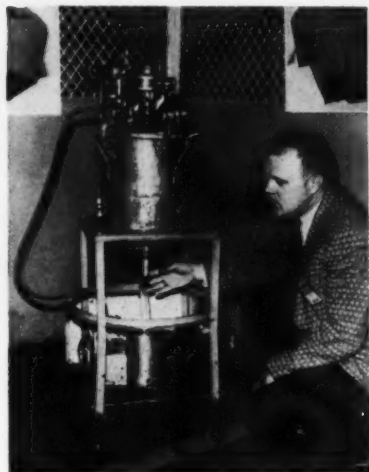
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WESTERN INDUSTRY — September 1958

Induced vacuum cuts air bubbles in mixing pots

REMOVING TINY AIR BUBBLES in potting compounds was a problem at Boeing Aircraft Co.—until they started using an induced vacuum in the mixing pot.

The potting compound is used to provide better insulation and

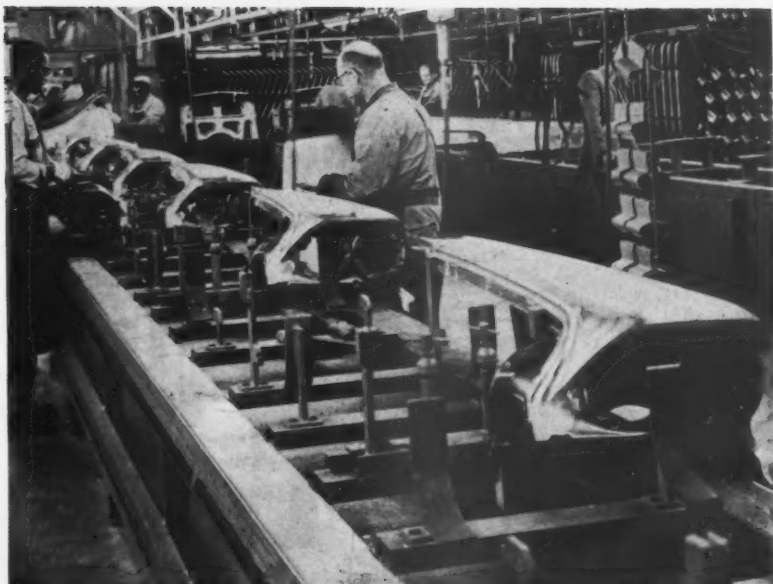


BUBBLES WERE A PROBLEM in mixing potting compounds at the Boeing Aircraft Co. Then they started using an induced vacuum in their mixing pots with the result that the sealing compounds were perfectly blended.

stronger electrical plug contacts in B-52 bombers, and it's essential that when application is made the compound is perfectly blended.

In the new process, the compound is stirred by a propeller-type agitator and a pump carries away released air. About three and a half hours are required to remove bubbles from a two-gallon container of compound. After mixing, the potting material is drained from the bottom of the pot through plastic tubing.

A catalyst is then added and further controlled mixing takes place. The compound is then placed in polyethylene cartridges and stored until used in freezers kept at a temperature of 40 degrees below zero.



HANDLING 132,000 CARS A YEAR takes careful planning. Just moving them along the production line is a monumental task—or it would be—without an intricate pattern of conveyors. Chain serves as the conveying medium for 122 of the floor conveyors at the Mercury plant in Rivera, Calif.

Conveyor lines spread over 3½ mls. To streamline car production line

IT TAKES 3½ MILES of conveyor lines to streamline the annual production of 132,000 cars at the Mercury plant in Rivera, Calif.—plus 133 pieces of related equipment.

It was Henry Ford who started mass production, and it's fitting that it should have reached its peak at the Mercury plant, 11 miles southeast of downtown Los Angeles.

Eight hundred cars are in various stages of completion at any given time, and when you realize that it's possible for each unit to differ from the other, you'll understand why efficient conveyor operations are the life-blood of the production pattern.

Movements of the conveyors are precisely scheduled and tied together by tele-typewriter, and a system of automatic transfers means car bodies can travel along one conveyor to the end, be picked up by a transfer conveyor which carries it at right angles,

and transfers it to a third conveyor automatically.

Chain serves as the conveying medium for 122 of the floor conveyors. A total of 67,000 ft. (12½ miles) of chain is employed. When shipped from the Link-Belt Ewart plant in Indianapolis it filled ten box cars and weighed 500 tons.

Principal types of conveyors used are dual chain, dual chain with rollers, dual chain side transfer, flat top and drag chain.

Eight types of SS bushed roller chain and two types of rivetless chain are used for the conveyors.

In addition to the 122 chain conveyors there are 26 powered roll and two belt conveyors. And 98 hydraulic live rolls and lift tables, six gravity roll and lift tables, 15 transfer tables, five hold tables, six turntables, a track mounted transfer car and over 2,000 ft. of gravity rolls are used to make handling the cars a smooth, efficient operation.

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ELECTRICITY

(continued from p. 39)

drive manufactured by the Zidell Machine & Supply Co., Portland, Ore., ever since Oct. 6, 1954. Total cost for repairs during this period was \$4.74.

One of the major reasons for these savings is the special type of connector employed on Zidell drives. During deceleration and reversing, the d-c. drive motor and the d-c. generator exchange

functions. In effect this regenerative action removes the entire load from the a-c. drive motor and allows this motor to feed power back into the line, thereby holding power consumption to a bare minimum, as required in overcoming friction.

Safety and reliability of operation were uppermost in the minds of engineers of the Modesto Irrigation District at Modesto, Calif., when they were looking for load-break oil switches and sectionalizing boxes for their underground

primary network system.

Adequate flexibility has become increasingly important with the added use of underground cables. While outages on cable systems are infrequent, the length of down-time when an outage does occur is long enough to cause considerable loss.

But with the right load-break oil-switches located at strategic points in cable circuits to provide flexibility, a system can be so arranged that important loads will have an alternate source of power available immediately. Standard switches will interrupt full 400 amp. load at all rated voltages with complete safety to operator and equipment.

Another addition to safe in-plant electrical operations is a lighted push-button panel switch featuring push-on, push-off alternate contact action. It's so designed that a name plate, pilot light and switching unit are combined into one assembly. It has an almost unlimited range of application for sequencing, movement-limit, start and stop, position-indicating and similar control operations on industrial electronic equipment in your plant.

Where space is limited, congestion is cut by replacing three units in one combined unit, and you can immediately replace the lamp from the front of the switch—no dismantling's necessary.

Nobody is more aware of the high cost of down-time than the Douglas Aircraft Company, Inc. At their plant in Torrance, Calif., they've installed an emergency power system which relies on two Onan electric generating plants. Installed in a permanent location in the plant annex, one 10 cw-6r, 10,000-watt a-c. generating set supplies emergency power automatically for vital lighting in their storage plant.

A second 10,000-watt unit, mounted on a two-wheel trailer and protected by a custom built, weatherproof housing, is used by maintenance department personnel wherever an independent source of electric power is needed. This mobile unit is especially valuable in that it can be carried quickly and easily to any spot in the plant where a power-outage occurs.

Yes, it pays to be prepared—don't get caught with a power failure and no stand-by equipment—it will eat away your profits.



YEARS OF SERVICE

...for fifty years Pacific Pumping Company has consistently improved pump design and pumping efficiency. A continuing program of research, standardization and sound engineering has earned recognition as "The Best in the West."

...and now PACIFIC SUBMERSIBLE NON-CLOG SEWAGE PUMPS

COMPACT AND EFFICIENT SEWAGE EJECTORS

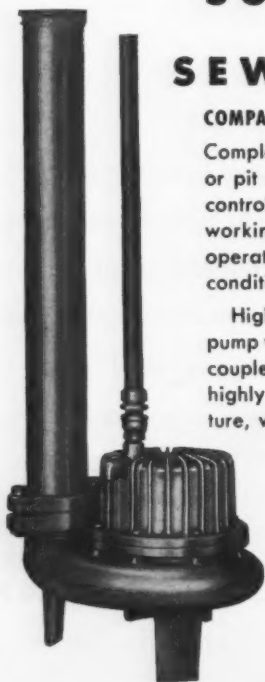
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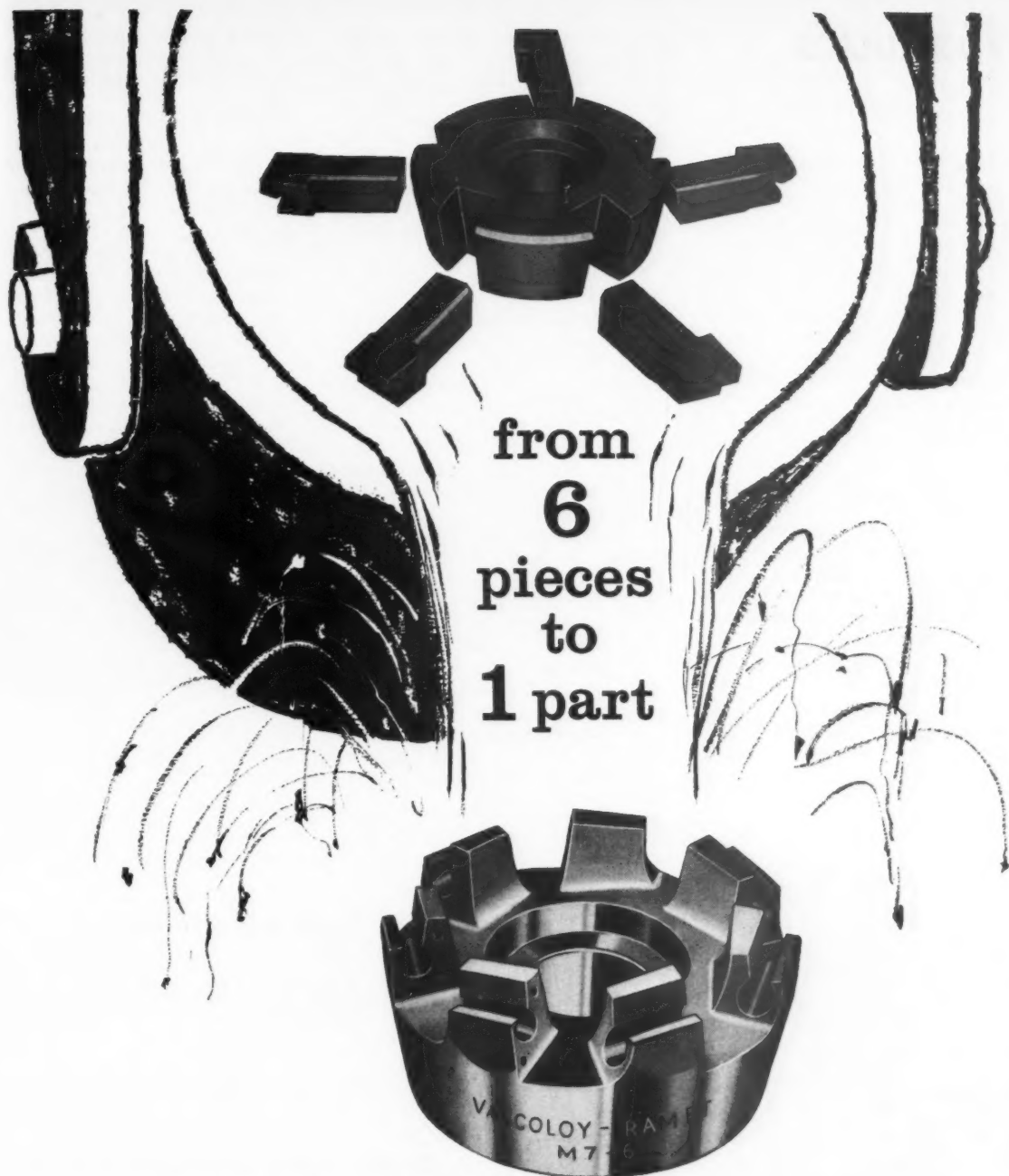
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HYDRAULICS

(continued from p. 37)

important part in the hydraulic field. Most of them are simple in design, rugged, and as trouble free as it's possible to build them. Generally, sleeves are cold rolled precision ground stock which can be chrome plated if desired, and the design is such that mechanical stresses on packings and seals are eliminated. Sleeve and packing adjustments can often be made in the field without removing the cylinder from the equipment.

A Western application of hydraulic power well worth looking at is the sawmill of Ivory Pine Co. at Dinuba, Calif. Says Manager **Walter LaCasse**: "The use of oil hydraulics in the production of lumber at this plant over a 10-year period has shown it to be an ideal medium for the transmission of power, either in a rotary direction or in reciprocating motions, particularly on many applications requiring automatic operation.

LaCasse continues: "Hydraulically operated motors are used wherever variations in speed and

quick reversal are required. Some of the smallest reciprocating motions involve cylinders not over one inch in diameter by six inches long, whereas the cylinder in major use is 6 in. in diameter and 15 ft. long, with a 3-in. piston rod connected with a single piston using 1,200 psi. at a speed of 350 linear feet per minute in either direction."

Major advantages of the hydraulic actuation are:

1. It lends itself very readily to remote electrical control.
2. It is very positive in its action, yet controllable to a remarkably fine degree.
3. It occupies relatively little space.
4. Infinite variability of speed and instantaneous reversal are available with hydraulic motors.
5. It is virtually trouble free when one learns to use it properly.
6. It makes most efficient use of power input.

Disadvantages listed by Mr. LaCasse include:

1. Plumbing connections are difficult to maintain, although this can be overcome by using flexible rubber tubing for connections at all points where

shock of operation may be encountered (such as junction of cylinders, motors and valves, etc.)

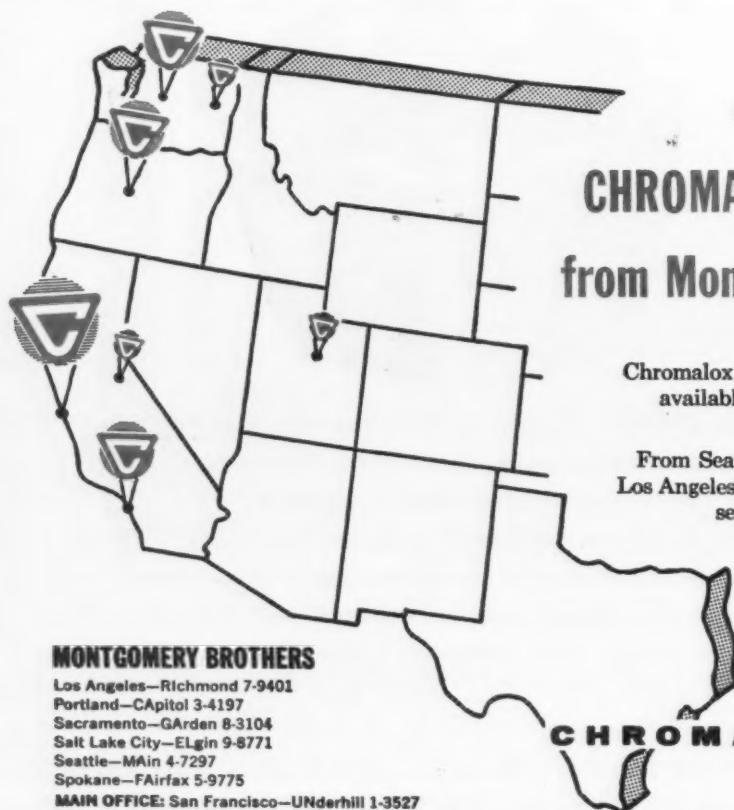
2. Dirt and cutting may get into the oil system and create difficulties. However, a good oil filtering system that is outside the pumping unit could overcome this.

3. Heat may develop where units are in heavy duty service. Under these circumstances a heat exchanger device that will keep temperatures at 155 deg. or lower is essential.

4. Rigidity is objected to, particularly where quick stops and reversals of a large cylinder occur. This can be compensated by the use of accumulators which not only prevent undue stress but also convert the energy used in stopping the motion into pressure available for starting the reversal.

"There is a place in any large operation for every power application," Mr. LaCasse concludes, "but our experience at Ivory Pine Co. has taught us that greater efficiency is obtained with hydraulics than with either air or steam."

Could this be the case in your plant?



MONTGOMERY BROTHERS

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For Western Industry...

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Chromalox Sales-Engineering service is now available from Spokane, Sacramento and Salt Lake City.

From Seattle, Portland, San Francisco and Los Angeles... Chromalox Sales-Engineering service *plus* warehouse stocks of the complete Chromalox line.



CHROMALOX *Electric Heat*

... for more details, circle No. 31 on Reader Service Postcard

WESTERN INDUSTRY — September 1958

WE CAN HEED
YOUR NEED FOR SPEED

with Ampco Metal Extruded Rods

Quick deliveries from stock at Burbank enable you to hold your inventory to a minimum. Rounds are cut to order, or furnished in mill lengths, in...

Grade 18. Meets Federal QQ-B-671, Class 3 Type 1 and Class 3 Heat Treated, in addition to AMS-4635B.

Grade 15. Meets Mil-B-6946, Federal QQ-B-666 Amend. 4 Grade B, and many other specifications.

Grade 45. Meets AMS 4640, Federal QQ-B-663 Comp. 2, and others.

Made exclusively from new metals, the consistency of these copper-base alloy extrusions makes them ideal for bearings, gears, worm wheels, hydraulic equipment, slides, gibs, and numerous other parts which must withstand abuse. The drawn finish reduces the machining allowance to the very minimum. Freedom from porosity and inclusions eliminates scrap and waste. Call THornwall 8-5504 or VICTORIA 9-2391 (Los Angeles) for fast delivery now. Or write for Bulletin 73W.

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Extruded rod and bar

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Holders and accessories

Seam-welding wheels

Bearings machined from Grade 18 Ampco Metal extruded rod.

Valve guide of Ampco Metal extruded rod.



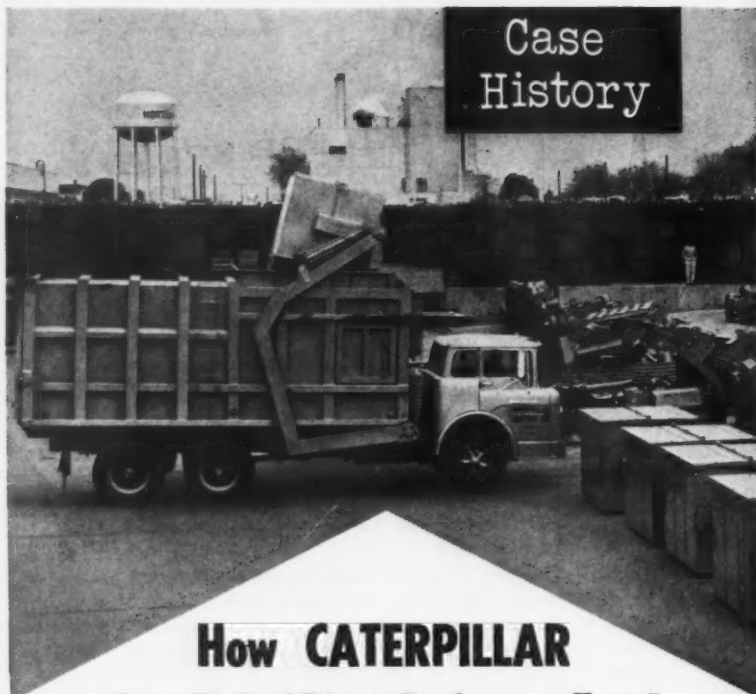
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WC-2

MAIN OFFICE AND PLANT: MILWAUKEE 46, WISCONSIN • SOUTHWEST PLANT: GARLAND (DALLAS COUNTY), TEXAS

... for more details, circle No. 32 on Reader Service Postcard
See listing in Directory Section



Case History

How CATERPILLAR Gets Rid of Plant Refuse ... Fast!

At the Morton, Ill. Plant of the Caterpillar Tractor Co. huge quantities of trash and rubbish are generated at many indoor points every day. Containers are placed at these points, and as each is filled, a fork lift truck brings up an empty and carries the full one to the outside pick-up line. Here, the DEMPSTER-DUMPMASTER takes over. Moving down the line, the driver automatically dumps the contents of each container into the 24 cu. yd. packer body, where the material is compressed to a fraction of its former volume. This assures big pay-loads on every trip to the disposal area. Trash and rubbish are enclosed at all times . . . can't blow or scatter . . . fire hazard is reduced to a minimum.

THE DEMPSTER-DUMPMASTER

The DEMPSTER-DUMPMASTER is economical! One-man operation. Big pay-loads from 50 to 100 cubic yards. It's safe! Clearance lifting arms never pass the cab windows, can't injure the operator. It's versatile! Handles containers below grade or from docks. Can be used for manual loading routes. Containers available in one through six cubic-yard capacity, with or without casters.

Dept. W1-9 DEMPSTER BROTHERS, Knoxville '17, Tenn.

Mfd. By Dempster Brothers, Inc.

FREE 40 PAGE BOOK

To: Dempster Brothers, Dept. W1-9
Knoxville, Tennessee

Please Send Without Obligation Your Booklet,
"How to Reduce Waste Disposal Costs."

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COMPANY.....

ADDRESS.....

CITY..... STATE.....



... for more details, circle No. 33 on Reader Service Postcard

BUILDING

(continued from p. 41)

high suction fans maintain a steady outflow of heated air from under the roof. This, in turn, provides a steady inflow of fresh air at floor level. Lighting in the shop area is very good, providing from 80 to 100 foot-candles of effective illumination at working level. Tooling in the shop provides for the majority of all jobs plant engineering mechanics are called upon to accomplish. This includes adequate testing and checking facilities as well as general tools. Practically any plant engineering work required can be accomplished in these shops without recourse to outside facilities.

Though the new facility has been in use only a relatively short time, Tom Hardgrove points out that it is ideally suited to the needs of his department. "It provides autonomy for the different sections of the department, but at no cost to the utmost cooperation and correlation of efforts. We have found the location of each foreman's office, so that he can be in physical and visual contact with his specific section at all times, to be especially useful. Working conditions throughout the department are pleasant, sufficiently roomy, well lighted, and convenient. These factors all add to personnel morale and efficiency. What more could a plant engineer ask?"

WHEELS OF INDUSTRY are turning at ever increasing speeds in the West—and power developments are being expanded to meet the growing challenge.



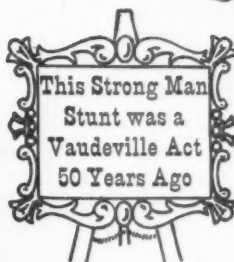
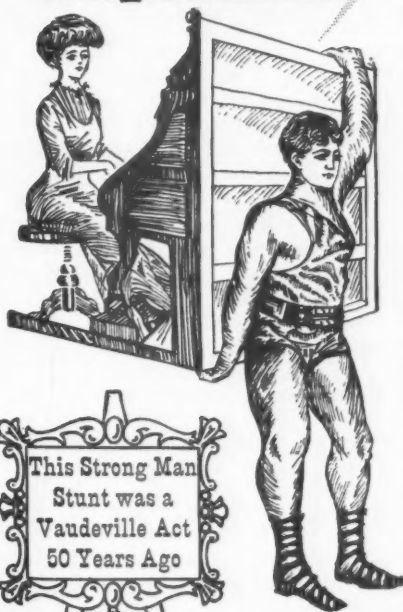
Colossal!

Amazing!

Stupendous!

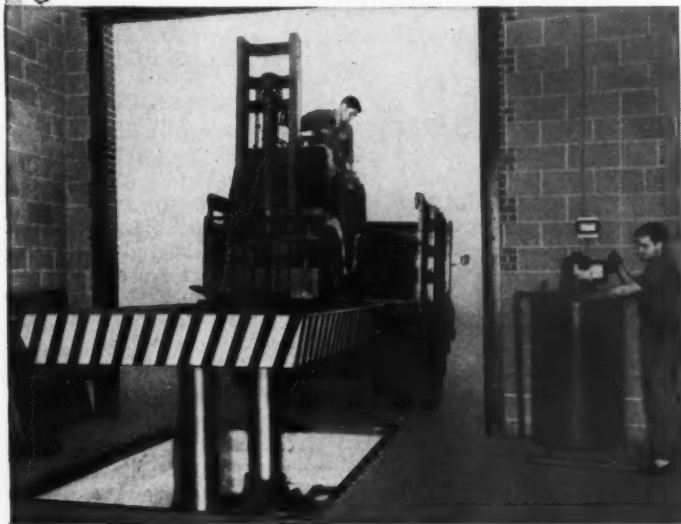
WORKMAN LIFTS 10 TONS WITH ONE HAND

**'on the control of a
GLOBE OILIFT,**



**Find out how OilIFT Power
will do YOUR heavy lifting**

With one hand on the control lever, or pushbutton, of an oil-hydraulic powered Platform Lift, a lone workman can perform Herculean tasks in lifting, loading and materials handling. The 10-ton Globe OilIFT (left) loads and unloads fork lift trucks. Similar Lifts move traffic over split-level floors to eliminate ramps . . . position materials for machine or conveyor feeding . . . load trucks, trailers, rail cars, airplanes.



Whether the load is 1,000 or 50,000 lbs. . . whether the lift is a few inches or 50 ft. . . the Globe OilIFT which does the job is assembled from standard components: power cylinders, superstructures, controls, etc. Each OilIFT is backed by a 30-year world leadership reputation in manufacturing heavy duty lifts.

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CITY . . . STATE . . .

. . . for more details, circle No. 34 on Reader Service Postcard

AIR POWER

(continued from p. 35)

ball, spun-locked in a stainless steel retainer. This ball rests on three ¼-in. diameter stainless steel carrier balls, in a lubricant-packed cavity, providing permanent lubrication for the life of the valve.

The ball cam end section can be used with any combination of two, three or four-way valve bodies and end sections, while straight-through construction permits drop-in packer replacement, speeding in-service maintenance.

Where leak-free operation with the use of raw air is the order of the day there's a diaphragm-operated, ½-in. NPT, 350 psi., control valve that features a one-piece hardened stainless steel stem with integral seats. Skirted seat rings resist wire drawing under the most severe operating conditions, while quick inspection of valve seats is easy . . . just remove the union nut which retains lower seat and change parts.

Quick maintenance is vital in pneumatic operations. And quick connective couplings that can be counted on are what Denver Brooks wanted at the United Air Lines Maintenance Base.

He found Hansen Mfg. Co.'s one and two-way shut-off couplings to be most satisfactory.

Take their Push-tite couplings for instance. To connect it you push the plug into the socket. To disconnect you reverse the operation. When it's connected the plug is free to swivel, which means there's no danger of kinks in the air hose. And construction of the couplings is sufficiently simple to allow easy replacement of washer, valve, and valve spring by merely unscrewing the socket end, leaving the locking mechanism intact and undisturbed.

In Paramount, Calif., the American Brass Co. is using flexible metal hose and tubing to excellent advantage, while at the Cherokee Station Power Plant of the Colorado Public Service Co., Denver, Colo., Triple-lok flare tube fittings and Weld-lok welding tube fittings are doing a profitable job.

Features of the Triple-lok flare fittings are the 3-piece designs—body, nut, sleeve—and the free-floating sleeve that aligns flare to the seat automatically, at the same time acting as lock washer, supporting tube and dampening

vibration. They're profitable installations wherever air pipe is used.

The California Research Corp. wanted a hose that would resist heat and flexing. It found the ideal solution in Aeroquip's industrial Teflon hose which is manufactured for use with fittings that are detachable and completely reusable. The hose and fittings are engineered to give top operating performance in applications where unusual exposure to wide temperature ranges (-100 deg. F to plus 500 deg. F.) and injurious chemical action is encountered. That's why the California Research Corp. found it so successful.

Features worth noting are the beveled shank which cuts the possibility of loose inner tube particles entering the air system . . . and metal to metal contact providing permanent seal against all pressures.

It's additions to in-plant operating efficiency like this that have earned pneumatic power its place in industry.

At the General Petroleum Co. (Socony Mobil Oil Co.) Vernon, Calif., an air-operated Bellows motor has proved so successful in their grease packaging operations that **W. W. Ridenour**, plant superintendent, has prepared a complete report on the operation.

By installing an electrically controlled air motor on each of two modified gate valves, the operator on their oil drum filling operation is able to roll a full container off the scales and cap it while a second container is automatically being filled.

It's done by scales which employ an adjustable target that may be set for various weights and which is fitted with photo-electric cells. When the light beam is broken by scale hands at a preset weight, the air motor closes the gate valve. The system is so circuited that the cycle will continue until the entire batch is packaged or a stop button is depressed.

But its use isn't limited to filling oil drums.

It's equally at home clamping tubes . . . speeding milling operations . . . multiple welding . . . and rolling flat pieces of tin into tubes for paste-bottle type brushes, etc.

Where oiled air is needed there's a light weight lubricator that can be installed anywhere in the air line. Pressure backs up into the feeder, and by means of a breather

into an oil reservoir a fog of oil is forced into the air line—providing lubrication. Because the oil is in the air and not clinging to the hose walls, there is very little deterioration.

Another cleaning aid is hydrodyne-AC, a liquid which, when fed into air compressor intake lines by a drip feed lubricator, removes carbon and carbon build-up on valves and rings.

The manufacturer claims that for each dollar spent for hydrodyne-AC, from \$2 to \$5 is saved in reduction of maintenance costs and materials. (Cost of hydrodyne is from 2 cents to 4 cents for each eight hours of operation for each 1,000 cfm.)

Low maintenance cost is a prime concern to **Frank Young**, Administrator — Tool Control, Santa Monica, Calif., Division., Douglas Aircraft Co., Inc.

"Air has become an almost indispensable source of power for driving the many and varied tools used by airframe manufacturers," Frank said.

"At Douglas the use of air for driving portable drill motors has almost entirely replaced electricity. And even though there is an efficiency loss," he continued, "air drills give more power for their size, are more easily controlled and can be overloaded for long periods without damage.

In addition most air drill manufacturers have refined their design to incorporate features normally found only in expensive stationary equipment, such as positive power feed and variable speed controls.

This, together with the compact size and ease of attachment to jig and fixture, makes air tools highly desirable.

A typical example of this flexibility is demonstrated in the DC-8 plexiglass window drilling machine which uses 32 K-Matic air drills, and drills holes simultaneously in one window.

When reciprocating and vibrating motion is required, air power is far superior to electric power, and most of the trimming, chamfering and routing which is done on a fixture or in an assembly jig, is done with air motors."

In conclusion, Young adds, "Air, while more expensive initially, does have a size-power ratio advantage plus low maintenance costs."

Which means you can probably use it profitably in your operation. Think about it.

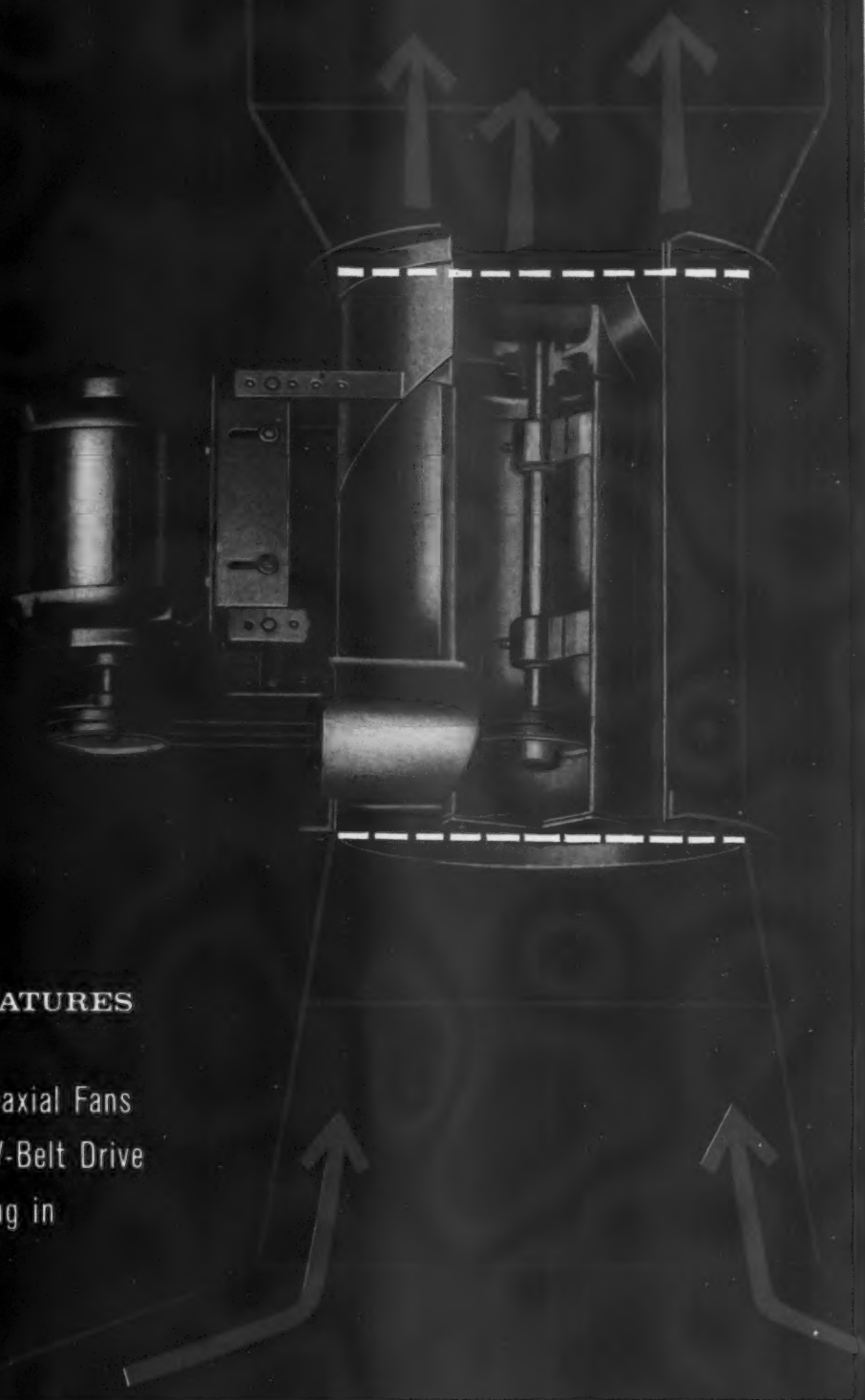
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... for more details, circle No. 36

MECHANICAL P.T.

(continued from p. 33)

or pull four one-way or free-wheeling clutches, variable speeds from maximum to zero are achieved. These clutches also give variable motion to the output shaft to which they are attached.

The clutch drives the output shaft using rollers that roll in and out in a wedge. As the main clutch moves the drive in one direction, the rollers roll into the wedge, first locking the inner and outer parts of the clutch together and then transferring the remaining motion into rotation of the output shaft.

Sound complex? ... it might, but you'd be surprised at the small amount of space it'll take up in your plant.

Space was a problem at the pressure treating plant of Pope and Talbot, Inc., St. Helens, Ore., when it decided to build its own incising machine.

One of the largest of its kind in the United States, the plant is concerned with treating lumber to protect it against deterioration. Incising, separating the outer fibers at regular intervals by knife-like teeth, assures uniform penetration and distribution of the preservatives.

Compact drives were needed in the limited space available, and positive gripping action was essential. Gates Vulco ropes were recommended and installed on drives from the motor to the jackshaft; jackshaft to bottom roller; and vertical shaft to driver for the vertical rolls. Double V-belts were installed on the serpentine drive to power the side rolls.

More than 2,500,000 ft. of lumber has been processed since these drives were installed.

George Christie, master mechanic at the Pope and Talbot plant, says, "... these drives have stood up for four years and look as though they're good for many more. They're entirely dependable and satisfactory."

At the Oregonian Publishing Co., Portland, Ore., a similar installation has increased efficiency.

On a very high speed router used to cut excess metal from printing plates, it was found that a flat belt could not stand up under speeds of 20,000 rpm. The belt would stretch, and, after about three months, would break.

But with the addition of a specially designed high speed belt with low stretch and low vibration characteristics, J. A. Melvin, mechanical superintendent at the Oregonian Publishing Co., reports "... they're just fine—and they last about five times as long as belts previously in use."

And while we're in Oregon, take a look at the right angle speed reducer installation at the Crown-Zellerbach plant in Lebanon.

Western Gear Corp.'s right angle spiral bevel speed reducers were chosen because of their greater drier capacity and stepped up machine speed. The same for the Crown-Zellerbach, Camas, Wash., division.

In this installation calender drives consist of a right angle speed reducer, cone pulleys for both the machine floor and line shaft, and air operated clutches. The replacement of old style bevel gears has materially reduced maintenance problems and permitted better production control.

"The initial installation of speed reduction units," says Edward O'Brien, a professional engineer in San Francisco, "presents no problem. It's mis-application that gives rise to heavy maintenance costs. For instance," he continues, "a unit is purchased and installed to deliver 5 hp. at 400 rpm. Then it's retired due to a change in operations and put in storage. Later it's taken out and used where 5 hp. is required at 200 rpm. This is done by reducing the input speed through V-belts ... and when it fails, the manufacturer is blamed."

"Or perhaps a 5-hp. motoreducer at 160 rpm. is purchased without adequate consideration of the class of gear required. A class three gear may be indicated, but through a variety of careless attitudes, a class one gear may be installed. Result—complete failure. And again the manufacturer is blamed."

Mechanical power transmission is like marriage—once you've repeated the vows or purchased the equipment, there's every reason why it should work. But you're in for trouble if you think that's all that is required.

Skillfully learning to use the right application in the right circumstances ... being careful not to overload a machine that's already working a peak capacity ... and making allowances for future use are important.

You'll find that out—one way or the other.

Change motors in minutes— with FALK all-steel MOTOREDUCERS



OUT COMES OLD MOTOR ↑



IN GOES REPLACEMENT MOTOR →

No long and costly "down time" involved

Motors can be interchanged or replaced *in minutes* with the all-steel, All-Motor type FALK Motoreducer. No long and costly "down time" is involved in making the change!

Best of all, replacement is not limited to original make of motor—new NEMA frames may be substituted for old. This versatile Motoreducer operates with any make, speed or type of standard foot-mounted motor within its AGMA rating. No modification, no special shaft, no "partial" motor required.

In addition to unmatched motor interchangeability, this dependable gear drive—the "work horse of industry"—offers: widest choice of output-shaft position (horizontal, vertical, right-angle)...any output-shaft connection...any mounting, including wall and ceiling...standard speed range from 1.5 rpm to 1430 rpm. All these advantages, plus proved efficiency, low maintenance and extra-long life, make the All-Motor type FALK Motoreducer your best buy for any job requirement.

Furnished in sizes up to 75 hp with any make, style or type of motor; or, *without a motor if desired*. FALK Motoreducers are available from convenient factory, field or distributor stocks, from coast to coast.

Write for Bulletin 3100

THE FALK CORPORATION, MILWAUKEE, WISCONSIN

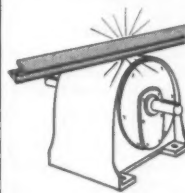
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- Single Helical Gears
- Herringbone Gears
- Marine Drives
- Steel Castings
- Weldments
- Contract Machining

FALK

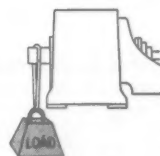
...a good name in industry

FALK "IN-BUILT" FACTORS assure full dependability— better service—longer life



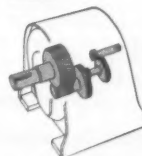
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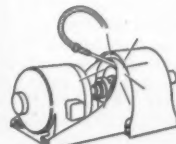
LARGE OVERHUNG LOAD CAPACITY

Large shafts, oversize bearings...rigid mountings with wide bearing spans to handle maximum loads.



PRECISION GEARING

Heat-treated alloy steel gearing, precision cut and shaved after heat treatment to eliminate distortion.



SEALED HOUSINGS

Splashproof, dustproof, oiltight. Dual closures and one-way vents keep oil in, dust and moisture out.

... for more details, circle No. 37 on Reader Service Postcard
See listing in Directory Section

Best manuals on electric controls

circle numbers on postcard, p. 99

A complete line of high voltage starting equipment

How can you get all the facts on full and reduced voltage starting and reversing of squirrel cage, synchronous, and wound rotor motors? By reading this fact-packed 36-pager which pictures and describes all types of equipment for this control. The book starts out with features, construction and performance data on the air-break contactor . . . then describes starters with air-break switching. Next comes synchronous motor starters (full and reduced voltage with current limiting fuses) . . . induction motor starters (full and reduced voltage with current limiting fuses) . . . wound rotor motor starter (primary and secondary control with current limiting fuses) . . . oil-immersed contactor . . . starters with oil-immersed switching . . . synchronous motor starters (oil-immersed switching with current limiting fuses) . . . squirrel-cage motor starters (oil-immersed switching with current limiting fuses) . . . wound round motor starter (oil-immersed switching with current limiting fuses). Of vital interest to you will be the modifications and special features section starting on page 32. These four pages contain applications for you. **Allen-Bradley Co.** . . . for your copy, circle No. 150

New line of small enclosed switches

These switches can be wired in a jiffy. A unique split design enclosure exposes the basic switch terminals for easy wiring. Other features include a new one-piece insulator-seal cemented into the bottom enclosure, a hex-shaped connecting hub, a durable die cast enclosure, and improved appearance. You can find further details in this bulletin which pictures and describes the complete line of 12 switches. The mounting dimensions on the back will be especially helpful. **Micro Switch, a division of Minneapolis-Honeywell Regulator Co.** . . . for your copy, circle No. 151

High voltage air-break contactors

For control of large motors, primary switching of induction furnace transformers, and other high voltage applications . . . try the air-break contactors presented in this bulletin. It tells how these contactors are designed for reliable, maintenance-free switching applications to 5,000 volts. These contactors have short arcing time, an important feature in plugging and dynamic braking operations. Selective drawings, tables and photographs illustrate points so you can see where the contactors can fit into your operations. **Allis-Chalmers Mfg. Co.** . . . for your copy, circle No. 152

Automatic controls for industrial processes

Fifty pages detail information on a complete line of automatic controls for heating, air conditioning, ventilating and other industrial processes. Plenty of diagrams, photos and charts give you the picture on these devices. And the booklet starts out in the right way by explaining the terminology used. Then you can safely and easily glide through thermostats, electronic temperature controls, motor operated valves, motor operators, ventilation controls, hot water controls, accessories, etc. **Barber-Colman Co.** . . . for your copy, circle No. 153

160 pages on electromagnetic control

The book feels as though it weighs a ton . . . and it contains a ton of information on electromagnetic controls that is readily available through a quick-flip index system. Major headings include automatic transfer switches, remote control switches, contactors, relays, solenoids, electric plant controls. Then the index breaks these down into finer details so you can pinpoint exactly what you want—before turning the

page! And if you want further information on anything, there's a handy pre-paid postcard that you can send in. If you want details for electromagnetic control, you're bound to get it here. **Automatic Switch Co.** . . . for your copy, circle No. 154

Compact Rotax contacting units

Application information, full specifications and dimensions are neatly put down in this 12-pager which covers a line of compact contacting units, used to actuate electric signals or control functions. Basic arrangements of the multi-contacting units are outlined, showing how a simple circuit can be varied or expanded to provide sequencing, alternating, limiting and programming functions. Informative pictures and diagrams spark up this booklet for easy readability. **The Foxboro Co.** . . . for your copy, circle No. 155

Current-limiting circuit breakers

In 20 fact-packed pages you can get as much technical information as you want on these current-limiting circuit breakers. They safeguard against heavy fault currents to 100,000 rms. amp. Sections in the manual cover operational characteristics, suggested applications, fault current calculation on low-voltage a-c systems for the application of molded case circuit breakers. **I-T-E Circuit Breaker Co.** . . . for your copy, circle No. 156

A new a-c "Presswitch" designed for you

This folder gives you the facts on a new a-c. "Presswitch" suitable for inductive a-c. lighting loads, including large 277-v. fluorescent applications. The switch also withstands inrush and resistance loads at full rating and motor loads up to 80% of switch rating. "Presswitch" is available in single pole, double pole, three-way and four-way ivory or brown nylon buttons. They fit standard boxes and utilize standard wall plates. No special wiring is required. The design features listed on the back show you how "Presswitch" will fit into your application. **Harvey Hubbell, Inc.** . . . for your copy, circle No. 157

Custom-Built electric control systems

If you have cranes or conveyors . . . refineries or missile towers . . . lumber mills or process plants . . . you need electric control. And by reading through this four-page booklet, you can find the custom-designed equipment for you. Whether it be automation or explosion-proof control you're after, you'll want to know about the equipment pictured and described here. **Rundel Electric Co.** . . . for your copy, circle No. 158

Adjustable speed d-c. packaged drives

If your plant has a-c. power only, you might want to take advantage of improved performance through the wider range of speeds and closer speed control possible with d-c. motors. You can find out about this by reading these two 12-page booklets that tell about Ultraflex adjustable speed d-c. packaged drives. In Ultraflex drives, light and compact static power conversion units have replaced the conventional motor generator set to provide savings of up to 50% or more in floor space and up to 75% in weight. These and other facts are presented with the aid of charts, graphs and pictures to help you see how these units can work for you. **Cutler-Hammer, Inc.** . . . for your copy, circle No. 159

Revolutionary means of industrial control

"Cypak" can be the key to your success. It's a revolutionary means of providing automatic electrical control for machine operations, steps and processes, and co-ordinated handling of materials. It has no moving parts to wear, corrode, or jam. You can find out about Cypak in this easy-to-digest 16-page manual that tells out how it works, what it's made of, where it's being used, how it's being used . . . and how it can work for you. Impressive pictures, bold diagrams, and well-placed text spell out the advantages for you. The list of applications on page 8 contains one you can use. **Westinghouse Electric Corp.** . . . for your copy, circle No. 160

Packaged general purpose control

Find out about the ControlPak, which provides the right control for any job, designed and engineered for the specific installation. All controls and components are in one package—for the most convenient, space saving and practical arrangement of control. What can ControlPak do? It can be used for integrated conveyor control . . . shaftless mill roll stand control . . . continuous winder . . . coil transfer unit . . . etc. It's all here in a well-illustrated booklet. Reliance Electric and Engineering Co. . . for your copy, circle No. 161

36 pages on temperature detectors

If you want accurate measurement or control of temperatures between -325 and plus 1000 deg. F. then you'll want to read about the Thermohm detectors. It's all here in this 36-pager which relates seven design features that assure reliable, accurate temperature detection. Typical applications are presented in diagram form . . . and photographs and line drawings help spell out other advantages. Complete specifications are included with all assemblies, parts and accessories. Included is a postcard that will bring you more facts. Leeds & Northrup Co. . . for your copy, circle No. 162

Complete line of switches and timers

Lever switches, foot switches, push button switches, electronic timers, synchronous-motor timers, etc., are rounded up in this handbook. Besides complete specifications (tables and drawings) you can have operating information by reading through this booklet. Of special interest should be the contact and lever operating data. Also included in the booklet is complete price and ordering information. General Control Co., Inc. . . for your copy, circle No. 163

60-pages on motor controls

Facts are packed tightly into this 60-page manual . . . and the information is condensed! It's in quick to see-and-grasp tabular form. With just a flip of the index and a glance at the page, you can have specifications and prices on magnetic starters, magnetic contactors, push buttons, drum controls, foot switches, limit-tap master switches, pressure switches, float switches and repair parts. Particularly useful are the Application Data Section . . . and the hundreds of controls listed in a special index section. If you're in the market for electric motor controls—you'll find them here. Furnas Electric Co. . . for your copy, circle No. 164

Inductronic system for measurement and control

Want a precise method for low level measurement and control? You can find out all about it by reading this detailed 12-pager. It describes a system of direct current amplification particularly suited to industrial and laboratory processes requiring reliability of service, a high degree of stability and sensitivity with extreme accuracy. Applications, specifications, units for your job, etc., are pictured and described and backed with sound technical data. Weston Electrical Instrument Corp. . . for your copy, circle No. 165

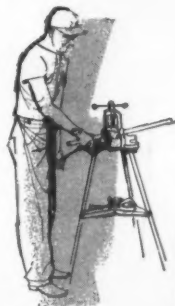
A wide range of switches for industry

Switches from postage stamp size on up are presented in this 20-page manual which includes many extra insert sheets. Switches described are for all actuators and terminal designs. They can be used on a wide range of equipment, from small electronic instruments to massive machine tools. There are hundreds upon hundreds of switches offered here—along with all specifications, characteristics, and dimensions. You can bet that the switch you're looking for is in this manual. Micro Switch, a division of Minneapolis-Honeywell Regulator Co. . . for your copy, circle No. 166

Automatic control for aero research and testing

This 20-page booklet describes the "PowrAmp" series of components—a high-speed, high-powered line of precision electric and electronic automatic control equipment, designed especially for use in aeronautical testing facilities and others requiring exact performance. Brief descriptions of functions and methods of operation of each device, essential performance specifications, pictures and schematic drawings are included. A table of definitions for use in interpreting and clarifying specifications for this type of equipment appears on page 18. Hagan Chemicals & Controls, Inc. . . for your copy, circle No. 167

TOLEDO'S NEW LINE OF PIPE CUTTERS

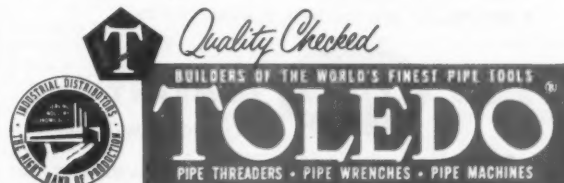


No. 10 1/8" to 1 1/4"
No. 20 1/8" to 2"
No. 201 1/8" to 1 1/4"
No. 202 1/8" to 2"



For Easier Grip . . . Straighter Cuts Choose one of TOLEDO's Four New Models

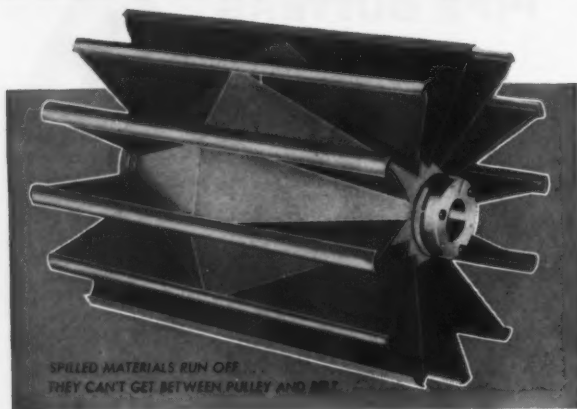
Now . . . faster, straighter, cleaner cuts than ever with TOLEDO's brand-new line of pipe cutters. From the new form-fitting handle to the strong malleable frame—both designed to fit your hand—you can't buy better. New sliding block construction, new replaceable slide plate, new high-alloy steel cutting wheel, new heavy-duty frame, guarantee you tops in satisfaction every time. For use with power drive, choose either the No. 201 or No. 202, with extra-wide rollers for even straighter cuts. Make your next cutter a TOLEDO. Check your supplier soon.



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. . . for more details, circle No. 38 on Reader Service Postcard

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FOR SAFETY, ECONOMY... Where fluids or other waste spill on the pulley or belting, installation of this new wing-type pulley will reduce the hazard of belting breaks and minimize belting replacement costs. Foreign materials run off; they can't cause abrasive wear, or chemical reactions harmful to the strength of the belting. Also, belting wear is retarded because of the reduced area of contact between belting and pulley.

FOR HEAVY-DUTY SERVICE... The pulleys are of sturdy welded-steel construction, and have demountable "QD" type tapered hub assemblies for easy installation. Made in a wide range of sizes.

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TRANSMISSION AND CONVEYING EQUIPMENT
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See listing in Directory Section

Controls for power, heat and processing

If you have power, heat or process equipment that need controls... you can find what you're looking for in this 50-page manual. Included are draft controls, power actuators, air pressure and flu-temp gages, steam regulators, etc. Diagrams and photos are used to point out salient features of all equipment. A large application data section—with information presented in report form—is included in the back of the book. **Cleveland Control, Inc.** ... for your copy, circle No. 168

164-page guide to electrical controls

Somewhere in these 164 pages you can find what you're looking for... if it has to do with safety switches, service equipment, panelboards, circuit breakers, wiring troughs. Information is presented in catalog form with photos and tables to pinpoint the device for you. A thumbnail index will help you zip to the page you want. Also included is list price and numerical index. **The Wadsworth Electric Mfg. Co., Inc.** ... for your copy, circle No. 169

Round-up of electric control literature

Several fact and spec sheets are available on a series of electrical instruments for control. Included in the literature are specifications of a new transistorized frequency converter; digi-coder; O-R-P cell and potentiometer-type recorder for measuring, indicating and recording oxidation-reduction potential, and a data logger. **Fischer & Porter Co.**

... for your copy, circle No. 170

36 pages on all types of resistors

This manual covers vitreous-enameled, wire-bound, and ribbon-wound resistors. The book lists ratings, body sizes, terminals, mountings, and enclosures. It also shows how to calculate resistance values and how to select resistors for particular applications. Components and ordering directions are included. The resistor equations starting on page 33 should be particularly helpful. **General Electric Co.**

... for your copy, circle No. 171

A round-up on data processing

Today's techniques require pinpointed accuracy. That's why data processing has become a vital part of the equipment of many plants. When you want to record or measure variables... or sort and shift information for your operations, you'll need to know about data processing. Here are handsome booklets on the subject, covering all types of applications from processing to missile production. **Beckman Systems Division**

... for your copy, circle No. 172

Boiler, pump, tank controls

The spotlight is on automatic boiler water level controls, compressor controls, tank controls, multiple boiler water level controls. Each type of control is covered in a four-page brochure. Schematic drawings and photographs tell the story better than words. All parts of the photos are identified so you have the complete picture and operating instructions are included. **The Johnson Corp.** ... for your copy, circle No. 173

World's widest line of motor controls

This eight-pager announces the fact that the product line includes the world's widest line of explosive-proof and dust-ignition-proof motor controls. Representative samples are then detailed, setting down facts on motor control components and accessories, circuit breakers, pushbutton stations, pilot lights, and others. Stress is placed on compactness and ease of installation of these motor controls. You'll be amazed at some of them. **Crouse-Hinds Co.**

... for your copy, circle No. 174

New techniques for panelboards

New techniques for more flexible and efficient panelboard design and installation are included in this 16-page manual. These techniques permit the convenient on-location assembly of plug-in molded case circuit breakers and bus enclosures. Result is a material reduction in cost and uncertainty normal to the installation of specially designed and constructed custom panelboards. **Federal Pacific Electric Co.**

... for your copy, circle No. 175

Packaged speed control drives

The advantages of speed control drives factory-mounted and factory-wired in package enclosures are detailed in this eight-pager. Equipment, components, accessories and applications are included. Also included are cabinet dimensions, ratings, and information required with inquiries. Pictures and text combine to tell the story effectively. **The Clark Controller Co.**

... for your copy, circle No. 176

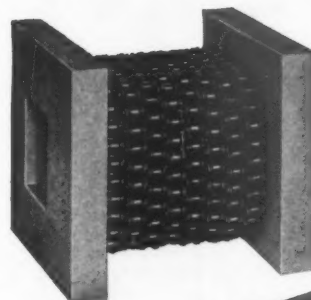
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A local phone call brings your Diamond Distributor fast! He's trained in factory methods and can give you engineering data and personal attention that will save you time and money.

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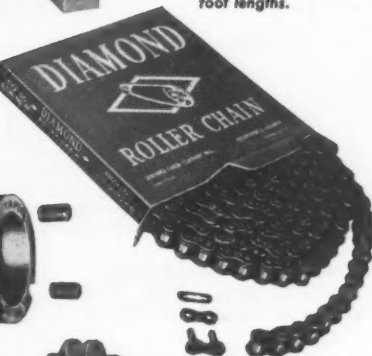


Diamond Roller Chain on reels, 25 and 50 foot lengths.

Packaged Diamond Roller Chain in convenient 10 foot lengths.



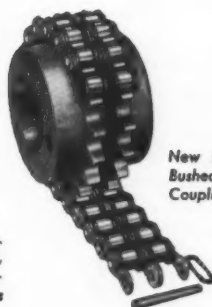
Diamond Taper-Bushed Sprockets.



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New Catalogs are available for the asking. No. 7, Diamond Flexible Couplings. No. 37, Diamond Double Pitch Chains and Sprockets. No. 757, Diamond Stock Roller Chains and Sprockets.



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Casper...Great Northern Tool and Supply Co.
Power Service, Inc.

... for more details, circle No. 40 on Reader Service Postcard
See listing in Directory Section

Best manuals on speed reducers

circle numbers on postcard, p. 99

95 pages on speed reducers from A to Z

The smallest weighs less than a pound . . . and the largest weighs over two ton. These—and speed reducers ranging between—are included in this mammoth book that would be a weighty and meaty contribution to your library. General subjects include: reducer selection; how to order; reducer series; helical primary series; gearmotors; miter boxes; helical series; worm and gear sets; AGMA ratings; lubrication. A detailed index on page 95 breaks these subjects down so you can pinpoint the one for you. The charts, diagrams, pictures and readable text add up to a valuable book for you. Morse Chain Co. . . . for your copy, circle No. 180

½ hp. to 25 hp. variable speed drives

In metalworking . . . pumping . . . material handling . . . continuous processing . . . you'll want to know how these variable speed drives can work for you. Look on pages 2 and 3 of this eight-pager and you'll see several types pictured. Then flip the page to the center-spread which lays out for you the working parts of this drive. You'll agree that it's rugged, compact and protected. The "how to select a drive" on the back will make your decision easier. Worthington Corp. . . . for your copy, circle No. 181

Just off the press 16-pager

It's hot! This manual is just off the press and it contains the latest information on Shaft-King speed reduction drives. The Shaft-King consists of a compact reduction gear unit that mounts tightly on the shaft extension of the driven machine by means of a keyed, tapered bushing. And you can find out how these drives save space, are easy to select, easy to install, economical, versatile and extra safe. The manual takes you through construction features, accessories, applications (with schematic drawings), selection (with how-to-do-it steps), service classification. Three pages of drive selec-

tion tables will help nail down your choice . . . and the dimension tables on pages 14 and 15 will show you how the drives will fit your operation. American Pulley Co. . . . for your copy, circle No. 182

Gear reducers powered by frame motors detailed

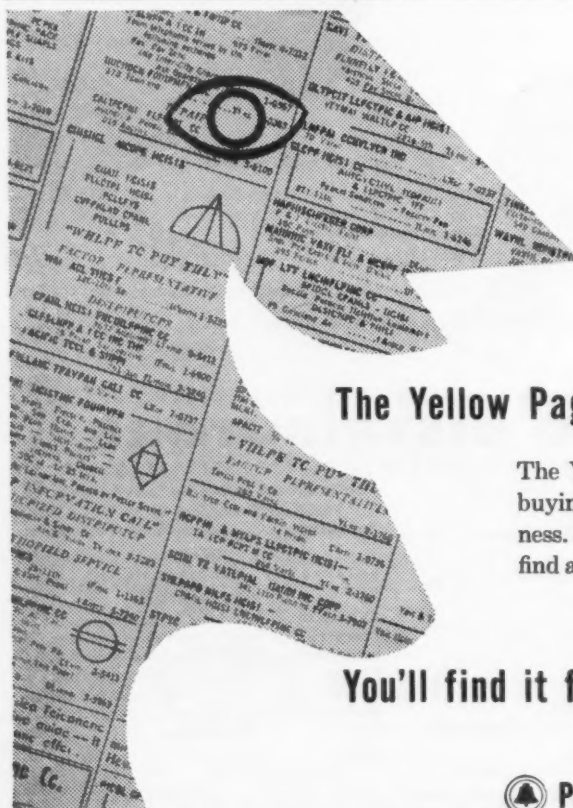
Gear reducers powered by standard frame motors mounted on a shelf attached to the reducer are the subject of this four-page bulletin. Particularly intended for applications requiring continuous operation, such as conveyors, process equipment and agitators, where down-time is critical. Gear ratio changes and motor replacements can be made quickly without disconnecting the gear unit from the driven machine. The flexibility of the unit also facilitates motor standardization, making inventor reduction possible. And the gear portion is available separately without motor or mounting shelf. The bulletin gives application and engineering data of speed drives in ratings from 1 to 75 hp. with output speeds of 1.2 to 350 rpm. Louis Allis Co. . . . for your copy, circle No. 183

Engineering data on versatile speed reducers

This 12-page engineering guide is crammed with useful facts and data on single and double reduction speed reducers. Tables and guides include: guide for determining character of load; dimensions; horsepower capacities; V-belt and sheave selection; operating characteristics, etc. A section on page 11 shows how these speed reducers are compact and easy to install. Engineering drawings break down all information so you can see how figures apply. Stephens-Adamson Mfg. Co. . . . for your copy, circle No. 184

New quadruple reduction speed reducers

Complete data on horsepower ratings, dimensions, mounting information and a resume of construction principles applying to completely new quadruple reduction speed reducers are yours in this manual. You can also find out about two sizes of double reduction helical gear drives and three sizes of triple reduction helical gear drives in addition to the five sizes of quadruple reduction gear drives. Rating tables and engineering drawings set down the information in readily understandable style. Overhung load ratings and mounting charts on the back add up to valuable information for you. Link-Belt Co. . . . for your copy, circle No. 185



Whatever you need

The Yellow Pages will tell you where to find it

The Yellow Pages make a compact, handy, quick-to-use buying guide for almost anything you need for your business. Save time by turning to the Yellow Pages first. You'll find a complete list of qualified people anxious to help you.

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Pacific Telephone



. . . for more details, circle No. 41 on Reader Service Postcard
WESTERN INDUSTRY — September 1958

46 pages of speed reducers to 10,000 hp.

This guidebook details speed reducers in a wide range of ratios up to 10,000 hp. The reducers feature double helical hardened gears, heavy duty anti-friction bearings, mounted in rugged ribbed housings with efficiency ratings of 98% or better at full load. Contents of the guidebook include selection instructions; application classification tables; ordering instructions; rating tables; accessories; parts designations; installation and lubrication; custom applications. The manual is well laid out for easy spotting of data. **Western Gear Corp.**

... for your copy, circle No. 186

Compact speed reducer within a V-belt pulley

Speed reductions up to 8000:1 are possible with this compact speed reducer looking like—and built inside—a V-belt pulley. The one unit gives you reduction often requiring two or more reducing units. It provides two reductions: first from motor pulley to reduction pulley through a V-belt drive; second through the internal planetary gearing of the reduction pulley. Pictures and diagrams in this six-page fold-out tell you the story from automatic lubrication to overload release. Typical applications are pictured on the back. **Hart Reduction Pulley Co.**

... for your copy, circle No. 187

All-steel helical gear shaft mounted speed reducers

The 32 pages of this manual detail a speed reducer having a unit efficiency of 98½% for single reduction units . . . 97% for double reduction units, under full load. The shaft mounted drive delivers ½ to 50 hp. . . 420 to 5 rpm. output speed . . . output torque up to 31,500 lb.-in. Photos show you how you can get the speed you want . . . when and where you want it . . . in restricted space, with direct connections, for engine drives, to drive vertical shafts, for variable speed, etc. Selection tables, dimension charts, V-belt and sheave selection tables, and photos showing unlimited applications spell out the usefulness of this shaft mounted drive. **The Falk Corp.**

... for your copy, circle No. 188

Speed reduction as you want it

The center spread of this 12-page booklet unfolds the story of "speed reduction as you want it." It contains a cutaway photograph of this slo-speed double reduction speed reducer. Arrows point to the parts that work to get the speed reduction you want. All features are clearly spelled out so you can see if this is the unit you want. On the back of the booklet is a vital section on factors in speed reducer selection. **Sterling Electric Motors.**

... for your copy, circle No. 189

A rainbow of speed reducers and gears

This 80-page book has a color code for each section. The blue section deals generously with speed reducers . . . the yellow with gears . . . gray with chains and sprockets . . . etc. The speed reducer section begins with selection tables . . . then goes on to discuss torque and horsepower. A series of horsepower-torque tables show relationship between the two. The book pictures the many models of speed reducers available. A photograph of each model is shown, along with an engineering drawing detailing dimensions. All other specifications are listed. **Charles Bond Co.**

... for your copy, circle No. 190

Herringbone gear speed reducers

This four-pager on power transmission equipment features herringbone gear speed reducers built for endurance where long life under severe service conditions is essential. The reducers offer 97 to 99% efficiency, alloy iron housings and alloy steel gearing, with all pinions integral with their shafts. Units are available in single, double and triple reduction with ratios up to 355.8 to 1. Mechanical capacities are up to 1950 hp. You can get further details and specifications from the brochure. **Jones Machinery Div. of Hewitt-Robins, Inc.**

... for your copy, circle No. 191

Variable speed drives from top to zero and reverse

In this little packet, you get a manual, price list (with torque and speed ratings), dimension sheet, and installation sheet on a 1/15 to 5 hp. variable speed drive. The 12-page manual stresses principles of operation, operating advantages, automatic speed control, how speeds are obtained, basic design, specification tables and modifications. The price list has a section on "How to match the drive to the application" and various tables to help you select the right drive. The certified dimension sheet will find the right size of speed transmission for you . . . and the installation data sheet will make sure the speed drive will fit your application. All this is yours in one handy packet. **Graham Transmissions, Inc.**

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Here it is
...and it's

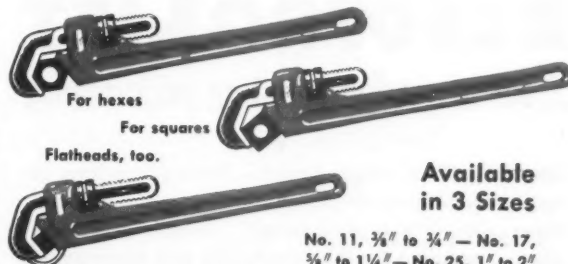
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For hexes

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Flatheads, too.

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Famous **RIGID** heavy-duty construction with guaranteed housing. Narrow jaw design makes work easy in tight places even on thin nuts. Comfort-grip I-beam handle has handy hang-up hole. The new **RIGID** Hex Wrench gives you more for your money than wrenches costing twice as much. Try it, buy it at your Wholesaler's.

The Ridge Tool Company • Weymouth, Ohio, U.S.A.

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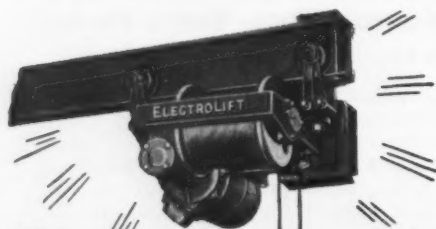
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64

All-steel motoreducers to fit any job

Any size... any type... any output speed... any type of motor... any mounting... any service. You name it—and this eight-pager will tell you the motoreducer to fit your job. Load classification and selection tables will steer you to the right motoreducer, and drawings and photographs will show you types and mountings available. On the back of this booklet are photos covering a host of applications... some of which are right down your production line. **Engineering Products.** (Ledeer, Inc.). ... for your copy, circle No. 193

Worm gear reducers for intermittent operation

Performance and dimension data is laid out in easy-to-spot table form in this four-page brochure. The tables spotlight compact reducers which provide high torque multiplication and speed reduction at low cost. The worm is mounted on heavy-duty ball bearings and the output shaft rotates on bronze bushings. Check the selection information and ordering instructions on the back to see how these reducers can go to work for you. **Tulsa Winch Division of Vickers, Inc.** ... for your copy, circle No. 194

Worm gear drives from tiny to tremendous

This 16-page handbook leads you to worm gear speed reducers whose center distances range from 3.000 in. to 21.837 in. and that are under 10 in. in height to almost 6 ft. Units covered in the handbook include: horizontal right angle reducers... vertical reduction units... multiple reduction units... fan cooled units... giant worm gear reducers. On pages 12 and 13 are specialized reducers for custom-design requirements. Integrated assemblies are on page 14... and worm-gearing components are shown on page 15. **The Cleveland Worm & Gear Co.** ... for your copy, circle No. 195

Best manuals on gear motors

circle numbers on postcard, p. 99

98-page guide to gear motors

Definition of terms and formulae for calculating the capacity of speed reducers is just the start of this picture and spec-filled reference book. Standard duty worm gear reducers... helical gear speed reducers... flexible gear couplings... and just about everything to do with gear and reduction units are packed in this concisely written booklet. Page after page of blue prints add clarity to description and the list of distributors on the back cover enables you to talk with qualified engineers specialized in gear applications, when you need help in your production operation.

And there are two other booklets available. The first is devoted to motorized drives and packs an 82-page load of information you'll be glad to add to your catalog library. Cutaways, specs, charts and photographs are liberally used to make the selection of motorized drives... gear motors easy. Thrust load ratings, selection tables, and torque conversion tables are here for your benefit, too.

Shaft mounted drives, subject of the third booklet, are detailed in such a precise way that you'll find it impossible not to enjoy this 22-page reference book. **Foot Bros. Gear and Machine Corp.** ... for your copy, circle No. 200

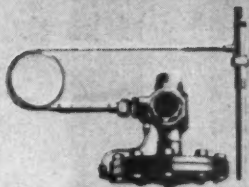
Separate booklets present gear story

Shaft-mounted speed reducers... gear motors from ¼ to 3/4, hp. 520 to 6 rpm... low speed drive units... flexible speed reduction, are subjects carefully covered in these four booklets. Shaft mounted speed reducers are designed for applications which require multiple reduction belt or chain drives. Look at the numbered cutaway on page 2 of catalog 6616, and the way each identified part is then detailed inch by inch. And the picture series on pages 4 and 5 showing the ease of installation. It's the same with the booklet on new gear-motors... carefully photographed how-to-do pictures add depth to clearly phrased word descriptions. Try following the three simple steps on page 3 to see which gear motor you need. While you're at it, get catalogs 6487 and 1468, too. If you use speed reducers or gear motors, this is the kind of basic information you need to keep up on. **General Electric Co.** ... for your copy, circle No. 201

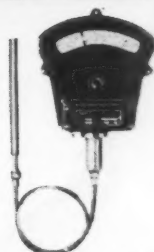
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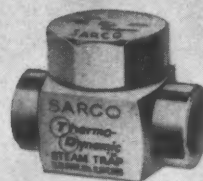
Sarco Type 21 Self-Powered
Temperature Regulator



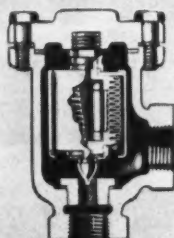
Sarco Type 24-30 Self-Powered
Pilot Operated Temperature Regulator



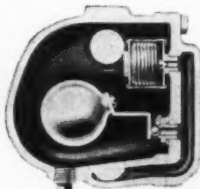
Sarco Type LSI Electric Indicating
Temperature Controller



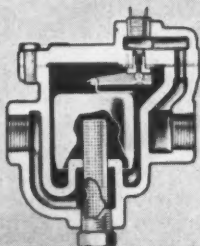
Sarco Thermo-Dynamic
Steam Trap



Sarco Thermostatic
Steam Trap



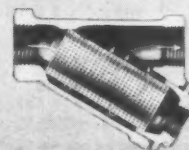
Sarco Float-Thermostatic
Steam Trap



Sarco Inverted Bucket
Steam Trap



Sarco Liquid Expansion
Steam Trap



Sarco Pipe Line Strainer

These SARCO products
also are available locally

Air Eliminators
Balancing Fittings
Cooling Controls
Compressed Air Traps
Dial Thermometers

Condensate and Vacuum
Pumps
Lift Traps
Electric Thermostats and
Pressure Switches

Finned-Tube and Baseboard
Radiation
Water Blenders
Motor-Operated Valves
Radiator Traps

Radiator Valves
Room Thermostats
Solenoid Valves
Weather-Compensated Heat-
ing Control Systems

Depend on your SARCO sales representative to supply you with this complete

SARCO QUALITY LINE

Through your nearest Sarco sales representative,
you can get every product in the complete line of
Sarco traps, temperature controls and steam spe-

cialties. For your convenience, the complete list
of Western States Sarco sales representatives is
printed here, arranged by states.

7173-B

These are your SARCO Western States sales representatives

ARIZONA

Scottsdale

A. C. Baechlin

CALIFORNIA

Los Angeles

T. H. Creears Corp.

COLORADO

Denver

Equipment Specialties Co.

IDAHO

Boise

Mechanical Equipment & Engineering Inc.

MONTANA

Billings

Lefler Engineering Sales

NEW MEXICO

Albuquerque

Technical Service Co.

OREGON

Portland

R. H. Brown & Co.

UTAH

Salt Lake City

Williams, Gritton & Wilde

SARCO

COMPANY, INC.

635 Madison Ave., New York 22, N. Y.

... for more details, circle No. 45 on Reader Service Postcard
See listing in Directory Section



NOW

AVAILABLE

FROM



SWEPCORE UPVC LINED PIPE and TUBE TURNS UPVC LINED FITTINGS to solve corrosion problems

strength of steel plus corrosion resistance of UPVC combine to reduce weight, installation and maintenance costs.

The combination of unplasticized polyvinyl chloride and steel in Swepecore pipe and Tube Turns Plastics fittings brings out the best characteristics of each material. An extruded Type 1 Normal Impact UPVC tubing insert is mechanically bonded to a specially tested steel outer shell. Corrosive line fluids can be handled to 190° F.

at pressures up to 500 psi. No pressure allowance is lost as temperatures rise. UPVC lined steel piping systems can be installed quickly with few hangers. Gasket-connections allow for expansion and contraction of the line. Swepecore lined pipe in 20 foot lengths, and fittings are available from 1/2" through 3" ID. Larger ID sizes available.

Everything in Plastics and Stainless Steel:

SHEET • PLATE • PIPE • FITTINGS • VALVES

Call your ESCO representative today for details, or write direct.



**ELECTRIC STEEL
FOUNDRY COMPANY**

WAREHOUSES:

LOS ANGELES 22, CALIFORNIA.....	RAYMOND 3-8601
6415 E. Corvette Street	
SAN FRANCISCO BAY AREA.....	OLYMPIC 4-2732
Emeryville 8, California, 1280 65th Street	
PORTLAND 10, OREGON.....	CAPITOL 8-2141
2141 N. W. 25th Avenue	
EUGENE 4, OREGON.....	DIAMOND 3-2585
1464 W. 6th Street	
DENVER 7, COLORADO.....	FLORIDA 5-2349
3940 Grape Street	
SEATTLE 4, WASHINGTON.....	MAIN 3-4160
1131 W. Hanford Street	
SPOKANE 13, WASHINGTON.....	FAIRFAX 5-4507
N. 1327 Washington Street	
HONOLULU 3, T. H.	4-6186
630 South Queen Street	
ESCO LIMITED, VANCOUVER, B. C.	ELGIN 2288
8425 Ontario Street	

... for more details, circle No. 46 on Reader Service Postcard

WESTERN INDUSTRY — September 1958



INDUSTRIAL POWER EQUIPMENT

Buyers' Directory

a special service feature for the West's plant operating executives

HOW TO USE THIS DIRECTORY

For any product to be purchased or serviced, or about which further details are needed, refer to correct manufacturer's listing in "Where to buy in the West" section to obtain name, address and phone number of nearest sales and engineering office.

If you want more information about a certain type of power equipment for your plant, but names of manufacturers are unknown, refer to correct heading in "Classified Products" section for names of all manufacturers of that item who have sales offices in the West.

Manufacturers of industrial power equipment who are not listed in this directory probably do not have Western branch offices or distributors. If you want more information about manufacturers not listed, write: Editor, WESTERN INDUSTRY, 609 Mission St., San Francisco 5, Calif.

ACME CHAIN CORP., 812 Main St., Holyoke, Mass.
Chains for drives (detachable link, roller, silent transmission).

See advertisement on page 16

Representatives
Ariz., Phoenix—Garrett Supply Co., 130 W. Madison St. AL 8-5701
Ariz., Phoenix—Tractor Parts & Equipment Co., 2906 W. McDowell St.
Calif., Berkeley—Berkeley Industrial Supply, 1003 Pardee St.
Calif., Los Angeles—Western Belting & Mechanicals, Inc., 3525 E. Emery St.
Calif., Oakland—Edward L. Parsons, 600 Sixteenth St. TW 8-1577
Calif., Pacific Palisades—James P. McConkey, P.O. Box 226. GL 4-4989
Ore., Portland—Berg Evans Chain Co., 240 S.W. First Ave.
Wash., Seattle—Berg Evans Chain Co., 2221 Fourth Ave. So.

ADAMS, FRANK, ELECTRIC CO., 3650 Windsor Pl., St. Louis 13, Mo.
Feeder distribution panelboards, Distribution switchboards, Busduct, Enclosed safety switches, Boxes (floor, pull, junction).

Representatives
Calif., San Francisco—947 Folsom St. EX 7-2087
Colo., Denver—2046 Arapahoe St. TA 5-3991
Ore., Portland—4333 N. E. 54th St. AT 1-2613
Wash., Seattle—568 First Ave. S. MU 2-6934
Wash., Spokane—7924 Excell Dr. FA 8-1192

ADEL PRECISION PRODUCTS, a div. of **GENERAL METALS CORP.**, 1444 Washington Ave., Huntington 4, W. Va.

Controls (hydraulic), Motors (hydraulic), Pumps (hydraulic power), valves (hydraulic power line).

Branch Office
Calif., Burbank—1777 Van Owen St. PO 2-1131

Representatives
Ariz., Phoenix—Air-Draulics Co., 3135 N. 29th Ave.
Calif., San Francisco—Calpacific Equipment Co., 50 Hawthorne St.
Calif., So. Pasadena—Teglen Engr. Co., Inc., 1942 Huntington Dr. RY 1-2856
Colo., Denver—E. C. Wild Co., 695 S. Garfield St.
Ore., Portland—Ray Bobbs Air-Draulics, 218 S. E. 12th Ave.

AEROQUIP CORP., WESTERN DIV., 3015 Winona Ave., Burbank, Calif. TH 5-1551

Flexible hose lines with detachable, rousable fittings for all fluids, Self-sealing couplings.

Representative
Ore., Portland—Sparks—Aeroquip Northwest, Inc., 1624 S. E. Grand Ave. BE 4-4186

AIRMATIC VALVE, INC., 7313 Associate Ave., Cleveland 9, Ohio
Cylinders (air, hydraulic), Valves (air power line, hydraulic power line), Regulators (pressure).

Representatives
Calif., Arcata—Munnell & Sherrill, Inc., 156 So. G St. VA 2-1761
Calif., Oakland—Otrich Co., Grand Ave. at Weiden. TE 2-3781
Calif., San Diego—General Industrial Supply Co., 1115 F St. BE 4-6767
Calif., Ukiah—Munnell & Sherrill, Inc., Rt. 1, Box 559-H, No. Hwy. 101. HO 2-3490, -7272
Ore., Eugene—Munnell & Sherrill, Inc., 1620 W. Seventh Ave. DI 5-8792
Ore., Portland—Munnell & Sherrill, Inc., 1163 N.E. 63rd St. AT 1-0021
Ore., Roseburg—Munnell & Sherrill, Inc., 1958 So. Stephens. OR 3-3508

Wash., Seattle—Standard Equipment Sales, 204 W. Lucile St. PA 5-9440

AJAX FLEXIBLE COUPLING CO., INC., Portage and English Sts., Westfield, N. Y.
Couplings (flexible, shaft) for power transmission purposes.

Representatives
Calif., Los Angeles—A. W. Nash Co., 2112 So. Atlantic Blvd. AN 9-7304
Calif., San Francisco—Sampson Sales Co., 420 Market St. EX 2-7070
Wash., Seattle—Stephen Thurlow Co., Room 203, 1731 First Ave. So. MU 2-5488

ALECTRIC MFG. CO., 7842 39th Ave., Kenosha, Wis.

Thyatron and Phanotron tube tester and analyzer.
Representative
Ore., Portland—Donal Co., P. O. Box 7013. CA 2-4343

ALLEN-BRADLEY CO., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Automatic switches, Control centers, Electric control equipment, Electric motor controls, Electric switches.

See advertisement on page 24

Branch
Calif., Los Angeles—1264 So. Boyle Ave. AN 9-9421

Representatives
Ariz., Phoenix—Edward P. Weller & Co., 1902 E. Rovey Ave. AM 6-3188
Calif., San Diego—James A. Setchell Co., Inc., 301 W. G St. BE 3-3981
Calif., San Francisco—Campbell & George Co., 1601 Cortland Ave. MI 8-1236
Colo., Denver—Young Electric & Mfg. Co., 2134 Curtis St. AC 2-4841
N. Mex., Albuquerque—A & A Supply Co., 114 Morningside Dr. N.E. AL 6-0307

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ALLIS-CHALMERS—ATLAS CHAIN

Ore., Portland—J. A. Tudor & Associates, Inc., 1004 S.E. Belmont St. BE 2-1188
Utah, Salt Lake City—Stevens Sales Co., 1482 Major St. DN 7-5489
Wash., Seattle—J. A. Tudor & Associates, Inc., 2805 Western Ave. MU 2-7444

ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wis.

Air compressors (stationary), Bases (motor), Belts, V (rubber), Circuit breakers, Control centers, Controls (electric, electric motor), Engines, Gearmotors, Generators (electric), Motors (electric, DC; electric, poly-phase, AC), Pulleys, Rectifiers, Sheaves, Substations (unit), Switchgear equipment, Transformers, Transmission, variable speed.

Branch Offices

Ariz., Phoenix—3300 No. Central Ave.
Calif., Los Angeles—417 So. Hill St.
Calif., San Diego—747 Ninth Ave.
Calif., San Francisco—650 Harrison St.
Colo., Denver—655 Broadway Bldg.
Mont., Butte—81 Hirbourn Bldg.
N. Mex., Albuquerque—323 Third St. S.W.
Ore., Portland—520 S.W. 6th Ave.
Utah, Salt Lake City—136 So. Main St.
Wash., Seattle—1318 4th Ave.
Wash., Spokane—West 422 Riverside Ave.

ALLIS, LOUIS, see LOUIS ALLIS CO. ALUMINUM CO. OF AMERICA, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

Covered and bare aluminum wire and cable, fittings; Aluminum bus conductors, fittings; Structural aluminum; Aluminum conduit, fittings; Aluminum heat exchangers and tubes; Aluminum instrument tube, air lines; Aluminum desiccants and dehydrants; fabricated aluminum in all forms.

Branch Offices

Calif., Los Angeles—1145 Wilshire Blvd. MA 6-0241
Calif., San Diego—2962 Fifth Ave. CY 8-9326
Calif., San Francisco—2509 Equitable Life Bldg. YU 6-6484
Colo., Denver—105 Filmore St. DU 8-1619
Ore., Portland—1115 U. S. National Bank Bldg. CA 2-9861
Wash., Seattle—1411 Fourth Ave. Bldg. SE 4-4040
Wash., Spokane—610 Fidelity Bldg. RI 7-6124

Distributors

Ariz., Phoenix—Graybar Electric Co., Inc., 1700 N. 22nd Ave.
Calif., Fresno—Graybar Electric Co., Inc., 101 Van Ness Ave.
Calif., Long Beach—Parks & Co., 524 W. 17th St.
Calif., Los Angeles—Graybar Electric Co., Inc., 210 Anderson St.
Calif., Oakland—Graybar Electric Co., Inc., 1911 Union St.
Calif., Sacramento—Graybar Electric Co., 1900-14th St.
Colo., Denver—Graybar Electric Co., Inc., 104 Wazee Market
Ida., Boise—Graybar Electric Co., Inc., 1325 Idaho St.
N. Mex., Albuquerque—General Electric Supply Co., 820 First St. N. W.
Ore., Portland—Graybar Electric Co., Inc., Park & Flanders Sts.
Utah, Salt Lake City—General Electric Supply Co., 312 W. Second St.
Utah, Salt Lake City—Pole Line Distributing Co., 405 W. 13th St.

AMERICAN BRAKE SHOE CO., 530 Fifth Ave., New York 36, N.Y.

Air compressors, Hydraulic presses, Valves, Controls, Automatic and semi-automatic welders.

Branch Offices

Calif., Hawthorne—565 N. Prairie Ave.
Calif., Los Angeles—5805 Downey Rd. LU 5-1159
Calif., San Francisco—1010 Russ Bldg. DO 2-6436

AMERICAN BRAKE SHOE CO., see AMERICAN MANGANESE STEEL DIV., ENGINEERING DIV., and KELLOGG DIV.

AMERICAN MACHINE & FOUNDRY CO., see LELAND ELECTRIC CO., DIV.

AMERICAN MACHINE & METALS INC., see UNITED STATES GAUGE DIV.

AMERICAN MANGANESE STEEL DIV., AMERICAN BRAKE SHOE CO., 389 E. 14th St., Chicago Hts., Ill.
Hardfacing welding rod, Manganese steel castings, Ash handling pumps.

Branch Offices

Calif., Los Angeles—5805 Downey Rd. LU 3-4831
Calif., Oakland—850 Ferry St. HI 4-1703

Colo., Denver—Fourth & Wazee Sts. AC 2-1723

Representatives

Ariz., Phoenix—Norman Molyneux, 308 E. Lamar Rd. AM 6-3608
Calif., Los Angeles—Absco, Inc., 4600 W. Jefferson Blvd.
Calif., Oakland—Alloy Hardfacing Co., 405 49th St.
Colo., Denver—General Welding Supply Co., 1429 Market St. KE 4-5319
Ore., Portland—Oregon Tractor & Equipment Co., 7606 N. E. Union Ave. BU 5-2596

AMERICAN METAL HOSE DIV., AMERICAN BRASS CO., 698 So. Main St., Waterbury 20, Conn.

Conduits and fittings (electric), Ducts (bus and wiring), Hose (air, flexible metallic, hydraulic).

Branch Offices

Calif., Paramount—14900 Garfield Ave. NE 6-0321. ME 0-5811
Calif., Los Angeles—F. Somers Peterson, 1501 Maple Ave.
Calif., San Francisco—F. Somers Peterson, 157 13th St.

AMERICAN PULLEY CO., 4200 Wisahickon Ave., Philadelphia 29, Pa.
Bases (motor), Belting, drive (rubber), Collars (shaft), Pulleys (conveyor, flat belt), Reducers, speed (shaft mounted), Sheaves (adjustable diameter), Transmission, variable speed.

Branch Offices

Calif., Los Angeles—1238 So. Atlantic Blvd. AN 8-6061
Calif., Oakland—800 51st Ave. AN 1-9681, -82
Wash., Seattle—911 Western Ave. MU 0117

Representatives

(Represented by distributors in principal cities)

AMERICAN RECTIFIER CORP., 95 Lafayette St., New York 13, N.Y.

Battery chargers, Electric brakes, Elevator power supplies, Laboratory power supplies, Magnetic amplifiers, Marine power supplies, Plating power supplies, Rectifier power supplies, Transformers, Variable speed controls.

Representatives

Calif., Los Angeles—Hundley Co., 3282 Fletcher Dr. CL 5-7111
Calif., Palo Alto—Ellenje Co., 345 California Ave. DA 6-1655
Wash., Seattle—Standard Electric Sales, 204 W. Lucile St. FA 5-9440

AMERICAN STOCK GEAR DIV., PERFECTION GEAR CO., 152nd St. & Vennies, Harvey, Ill.

Gears (bevel, helical, spur, etc.), Gears (worm), Reducers, speed (worm gear), Sprockets.

Representatives

Calif., Los Angeles—Marwood, Ltd., 320 E. 3rd. MU 3241
Calif., San Francisco—Marwood, Ltd., 357 9th St. HE 1-7893
Ore., Portland—Marwood, Ltd., 209 S.W. 1st Ave. CA 3-5123
Wash., Seattle—Marwood, Ltd., 1714 1st St. EL 4747

AMES IRON WORKS, INC., 25 E. Second St., Oswego, N. Y.

Amesteam generators (packaged boiler units furnishing steam or hot water at various pressures and horsepower).

Representatives

Calif., Los Angeles—Torrell Co., 8240 Beverly Blvd. WE 3-9151
Calif., San Francisco—Atkins, Kroll & Co., 417 Montgomery St. SU 1-0318
Calif., San Francisco—H. J. Wickert & Co., Inc., 770 Folsom St. YU 6-2354
Colo., Denver—Hendrie & Bolthoff Co., 1635-17th St. KE 4111
Colo., Denver—G. M. Wallace & Co., 324 Denham Bldg. AM 6-0386
Mont., Butte—G. M. Wallace & Co., P. O. Box 208. Phone 2-8391
Ore., Portland—Burnstead-Woolford Co., 320 S. W. Stark St. CA 8-6686
Utah, Salt Lake City—G. M. Wallace & Co., 200 S. Main St. EM 4-5611
Wash., Seattle—Burnstead-Woolford Co., 1411 Fourth Ave. EL 4915

AMPCO METAL, INC., 1756 So. 38th St., Milwaukee 46, Wis.

Copper-base alloys to resist hard wear and corrosion.

See advertisement on page 31

West Coast Plant

Calif., Burbank—30 E. Burbank Blvd. TH 8-5504, VI 9-2391

Representatives

Colo., Longmont—Slack-Horner Brass Mfg. Co., P. O. Box 838 (License Foundry)
Wash., Seattle—Alaskan Copper & Brass Co., 3223 Sixth Ave. So. (raw materials)

AMPLEX DIV., CHRYSLER CORP., P.O. Box 2718, Detroit 31, Mich.
Bearings (flange, self-lubricating, sleeve, thrust), Cores (self-lubricating), Filters (permanent metal), Finished machine parts, Gears, Pulleys, Sprockets, Stock (bar, plate, sheet and strip).

Representatives

Calif., Huntington Park—Kingwell Bros., Ltd., 2618 E. 53rd St. LU 2-7427
Calif., San Francisco—Kingwell Bros., Ltd., 457 Minna St. SU 1-0514

ANACONDA WIRE & CABLE CO., 25 Broadway, New York 4, N. Y.
Wire and cable (electric).

See advertisement on page 116

Branch Offices

Calif., Los Angeles—807 Douglas Oil Bldg. MA 6-2371
Calif., San Francisco—120 Montgomery St. YU 6-0051, -52, -53
Colo., Denver—909 Seventeenth St. AC 2-0616
Wash., Seattle—954 Stuart Bldg. MA 3-4686, -7, -8

APPLETON ELECTRIC CO., 1701 Wellington Ave., Chicago 13, Ill.

Circuit breakers, Electric conduits and fittings.

Branch Offices

Calif., Los Angeles—6450 E. Bandini Blvd. RA 3-9551
Calif., San Diego—301 W. "C" St. BE 4-1222
Calif., San Francisco—1485 Bayshore Blvd. Colo., Denver—FR 7-8865
Ore., Portland—CA 3-7500
Wash., Seattle—1033 6th Ave. MA 2-5740

Representatives

Calif., Los Angeles—American Wholesale Electric, 130 So. Hewitt
Calif., San Francisco—California Electric Supply Co., 1585 Folsom.
Colo., Denver—Central Electric Supply Co., 500 Upper Quivas St.
Ore., Portland—Chown Electric Supply Co., 112 S.W. Second Ave.
Wash., Seattle—North Coast Electric, 173 Jackson St.

ARMSTRONG MACHINE WORKS, 816 Maple St., Three Rivers, Mich.
Steam traps.

Representatives

Ariz., Phoenix—John W. Ladlow, P.O. Box 1784. BR 6-2371
Calif., Los Angeles—Guy L. Warden & Sons, 209 W. 12th St. RI 7-0541
Calif., San Francisco—Refrigerating & Power Specialties Co., 380 Brannan St. EX 2-4000
Colo., Denver—Hendrie & Bolthoff Manufacturing Co., 1635 17th St. KE 4111
Ore., Portland—1814 S.E. 7th Ave. BE 4-9774
Utah, Salt Lake City—Pace-Turpin Co., 726 So. Third W. St. DA 2-5595
Wash., Seattle—Arthur Forsyth Co., 2800 15th Ave. AT 3-5716
Wash., Spokane—Arthur Forsyth Co., N. 120 Division St. MA 4-2933

ARROW-HART & HEGEMAN ELECTRIC CO., The, 103 Hawthorn St., Hartford 6, Conn.

Controls, Switches, Switchgear equipment.

Branches

Calif., Los Angeles—405 East 3rd St. MI 8-048
Calif., San Francisco—277 Pennsylvania Ave. MA 1-2112
Wash., Seattle—H. L. Williams, 1732 4th Ave. RA 5128

Representatives

ASSOCIATED GEAR & MACHINE CO., 829 Santa Fe Ave., Los Angeles 21, Calif.

Gears, Chain, Sprockets, Couplings, Speed reducers.

ATKOMATIC VALVE CO., INC., 545 W. Abbott St., Indianapolis 25, Ind.
Valves (air power line, hydraulic power line).

Representatives

Calif., Los Angeles—Brenner-Fiedler & Associates, 661 No. Spaulding Ave. WE 3-8811
Calif., San Francisco—Claude B. Smith Co., 200 Davis St. GA 1-7391
Colo., Englewood—Rocket Components Co., 2950 So. Fox St. SU 9-2548
Wash., Seattle—Fred G. Greaves Co., 418 Eighth Ave. No. MA 3-0680

ATLAS CHAIN & MFG. CO., P. O. Box 708, West Pittston, Pa.

Couplings, Roller chain, Sprockets.

Representative

Calif., Los Angeles (Maywood)—R. & J. Dick Co., 5276 Atlantic Blvd. LO 8-4014

Calif., San Francisco—R. & J. Dick Co., 510 Bryant St. SU 1-1341
Tex., Dallas—R. C. Brown Co., 5523 Dyer St. EM 7137 (for N. Mex.)
Wash., Seattle—R. & J. Dick Co., 307 Maritim Bldg. MU 1922

ATLAS COPCO PACIFIC, INC., 930 Brittan Ave., San Carlos, Calif.

Compressors, Pumps, Rock drills, Tools (air), Engines (Deutz air cooled diesel), Hoses (air).

Branch Offices

Ariz., Phoenix—1326 N. 22nd Ave. AL 2-2022
Colo., Denver—2360 So. Delaware PE 3-2926
Utah, Salt Lake City—1065 So. Second W. EM 4-2318
Wash., Spokane—1509 W. Second St. TE 8-1531

Representatives

(Distributors of Deutz diesel engines only)
Ariz., Phoenix—Pasco Machine Shop, Inc., 733 No. 19th Ave. AL 4-7371
Ida., Boise—Magneto Diesel Supply, 2406 Main
Ore., Portland—Edward L. Kropp Co., 1405 S.E. Eighth Ave. BE 2-6738
Utah, Salt Lake City—L. A. Jones Co., 1145 Richards. EL 5-8392

AUTOMATIC STEEL PRODUCTS, see MERCURY CLUTCH DIV.

AUTOMATIC SWITCH CO., Florham Park, N. J.

Controls (electric, hydraulic), Switches (automatic, electric), Valves (air power line, hydraulic power line, solenoid).

Branch Offices

Calif., Los Angeles—1233 Goodrich Blvd. RA 3-3669

Representatives

Calif., Huntington Park—Valvate Associates, 7814 State St. LU 3-1263
Calif., San Diego—Industries Supply Co., Fourth Ave. & J St. BE 9-0371
Calif., San Francisco—Paul S. Everly Co., 550 Ninth St. HE 1-2295
Calif., San Francisco—Leighton-Stone Corp., 770 Folsom St. YU 6-5731
Calif., San Francisco—Tercio Equipment Co., 939 Howard St. GA 1-1736
Colo., Denver—Clyde P. Elliott, 661 Delaware St. AL 5-7988
Colo., Denver—Hendrie & Bolthoff Co., 1635 17th St. KE 4-4111
N. Mex., Albuquerque—Ralph B. Black, 721 Loma Vista Dr. N.E. Phone 5-9625
N. Mex., Albuquerque—Steel & Engineering Products Co., 1609 Second St. N.W. CH 2-7863
Ore., Portland—Harris Supply Co., 524 N.W. 14th Ave. CA 8-4181
Ore., Portland—Western Machinery Co., 1035 S.E. Ninth Ave. BE 6-4117
Utah, Salt Lake City—Control Equipment Co., 323 W. 14th St. HU 7-7741
Wash., Seattle—Power & Controls, Inc., 5505 17th Ave. N.W. HE 3819
Wash., Seattle—Standard Electric Sales, 204 W. Lucile St. PA 5-9440
Wash., Seattle—Steam Supply & Rubber Co., 123 Jackson St. MA 6556

AUTOMATIC TIMING & CONTROLS, INC., King of Prussia, Pa.

Electric, electronic, electro-mechanical and electro-pneumatic timing and sequencing devices; Industrial and military control systems using differential transformer Servo systems.

Representatives

Calif., Los Angeles—Pacific Scientific Co., P. O. Box 22019. LU 3-1121
Calif., San Francisco—Pacific Scientific Co., 25 Stillman St. DO 2-0934
Colo., Denver—A. J. Nelson Co., P. O. Box 5502. KE 4-6751
Ore., Portland—Pacific Scientific Co., 1218 S. E. Seventh Ave. BE 4-9747
Wash., Seattle—Pacific Scientific Co., 421 Michigan St. MO 7000

BABCOCK & WILCOX CO., 161 E. 42nd St., New York 17, N. Y.

Boilers (central station, package, marine, industrial, waste heat, coal), Recovery units for pulp and paper industry, Pulverizers, oil burners, Process equipment.

Branch Offices

Ariz., Phoenix—Luhrs Bldg. AL 2-8391
Calif., Los Angeles—1111 Wilshire Blvd. MA 5-1575
Calif., San Francisco—450 Mission St. GA 1-3484
Colo., Denver—660 Bannock St. AC 2-8484
Ore., Portland—Failing Bldg. CA 8-9684
Wash., Seattle—Smith Tower MA 1496

BAILEY METER CO., 1050 Ivanhoe Rd., Cleveland 10, Ohio

Measurement and/or control of combustion, conductivity, draft, flow, liquid level, pressure, pH, speed, smoke density, temperature and vacuum.

Branch Offices

Calif., Los Angeles—816 S. Atlantic Blvd. CU 3-1187

Calif., San Francisco—424 Sharon Bldg. SU 1-0926
Colo., Denver—1506 Kearney St. EA 2-7745
Utah, Salt Lake City—2664 Capricorn Way CR 7-5251
Wash., Seattle—200 Broadway. SE 7192

BALDOR ELECTRIC CO., 4351-67 Duncan Ave., St. Louis 10, Mo.

Motors (electric, DC; poly-phase and single-phase AC).

Representatives

Calif., Los Angeles—Roland S. Boreham Co., 1206 So. Maple. RI 9-9251
Calif., Oakland—Edward L. Parsons Co., 600 16th St. TW 3-1577
Ore., Portland—Howard C. Miller, 4550 N.E. Alberta. AT 8-3700

BARBER-COLMAN CO., 1700 Rock St., Rockford, Ill.

Controls, Control centers, Instruments.

Branch Offices

Calif., Pasadena—191 E. Glenarm. RY 1-2811
Ore., Portland—1210 S.E. Seventh Ave. BE 4-9254

Representatives

Ariz., Phoenix—E. B. Bomar, 914 W. Madison St. AL 4-2726
Calif., San Carlos—Jerry Deere Associates, Inc., 1665 Laurel Ave. LY 3-8083
Calif., San Francisco—G. J. Yamas, 667 Howard St. YU 6-5031
Colo., Denver—Automatic Control Equipment Co., 5750 Pecos St. GE 3-6436
Colo., Denver—Denver Fire Clay Co., 3033 Blake St. TA 0251
N. Mex., Albuquerque—Control & Equipment Co., 5108 Grand Ave. N.E. AL 5-1631
N. Mex., Albuquerque—Denver Fire Clay Co., P.O. Box 497. Phone 3-1701
Ore., Portland—Grant Edgel Co., 8714 N.W. Siskiyou St. AL 4-8524, 25
Utah, Salt Lake City—Paul E. Benton Co., 1795 So. State St. HU 5-3423
Utah, Salt Lake City—Denver Fire Clay Co., 1374 S.W. Temple St. Phone 4-5565
Wash., Seattle—Merrill N. Musgrave & Co., 2019 Third Ave. EL 4425

BARKSDALE VALVES, 5125 Alcoa Ave., Los Angeles 58, Calif. LU 9-6181

Controls (compressed air, hydraulic), Valves (air power lines, hydraulic power line).

Branch Offices

Calif., San Francisco—278 Upper Terrace. JU 3-0162

Representatives

Ariz., Phoenix—Cone & Wallace Co., 1325 So. 26th St. BR 5-4496
Calif., San Diego—Bailey Equipment Co., Inc., 3856 California St. CY 5-5141
Colo., Denver—Industrial Materials, 2855 Walnut St. AC 2-0891
Ore., Portland—Tower Equipment Co., 16822 S.E. River Rd. OL 4-1745
Utah, Salt Lake City—Robert Taylor & Sons, 1077 So. Main St. DA 2-5525
Wash., Mercer Island—Tower Equipment Co., 5053 88th S.E. AD 2-1460
Wash., Seattle—Spencer Aircraft Ind., 8410 Dallas Ave. PA 3-0911
Wash., Spokane—Interstate Ind. Sales, P.O. Box 189. FA 7-5928

BECKMAN INSTRUMENTS, INC., 2500 Fullerton Rd., Fullerton, Calif. TR 1-4848

Data logging systems, Computer control systems, Industrial pH equipment, Dissolved oxygen analyzer, Infrared analyzer and other stream analyzers, Laboratory and portable pH meters, Spectrophotometers, Other analytical instruments.

Representatives

Ariz., Phoenix—Braun Chemical Co., 2930 W. Osborn Rd. AL 8-1511
Calif., Los Angeles—Aloe Scientific Division, 1150 S. Flower. RI 7-9571
Calif., Los Angeles—Braun Chemical Co., 1363 S. Bonnie Beach Pl. AN 9-9311
Calif., Los Angeles—Central Scientific Co., 6444 Telegraph Rd. RA 3-6141
Calif., Los Angeles—Harshaw Scientific Division, 3237 S. Gardfield. RA 3-3161
Calif., Burbank—Scientific Products, 100 E. Graham Pl. VI 9-1263
Calif., San Diego—Braun Chemical Co., 1745 Imperial Ave.
Calif., San Francisco—Braun-Knecht-Heimann Co., 1400 16th St. HE 1-8800
Calif., Santa Clara—Central Scientific Co., 1040 Martin Ave. EN 1-2266
Calif., S. San Francisco—Aloe Scientific Division, 140 Beacon St. PL 6-4600
Calif., S. San Francisco—Scientific Products, 330 Shaw Road. JU 3-4500
Colo., Denver—Aloe Scientific Division, 3800 N. Dahlia. DE 3-4291
Colo., Denver—Braun-Knecht-Heimann Co., 2301 Blake St. TA 5-0251

Colo., Denver—Mine & Smelter Supply Co., 3800 Race St.
N. Mex., Albuquerque—Braun Chemical Co., Box 497. Phone 3-1701
Ore., Portland—Scientific Supplies Co., 713 S.W. 12th Ave. CA 8-8504
Utah, Salt Lake City—Braun-Knecht-Heimann Co., 650 W. 8th So. St. EM 3-3961
Utah, Salt Lake City—Mine & Smelter Supply Co., 121 W. 2nd So. EM 3-2791
Wash., Seattle—Aloe Scientific Division, 1920 Terry Ave. MA 4131
Wash., Seattle—Scientific Supplies Co., 600 Spokane St. MU 3460

BELLOWS CO., 230 W. Market St., Akron 3, Ohio

Air motors, Electroair valves, Explosion proof valves, Hydro-Checks, Drill feeds, Grinder feeds, Bellows-locks drill and tapping units, Carbide heavy duty drill units, Rotary feed tables, Rotary index tables, In-line work feeders, Work holding and clamping devices, Arbor presses, Power Dome air cylinders, Han-D-Air cylinders, Electric pilot valves, Bel-Air valves, Pencil Size grinders, Lubri-Air controls, Sensorque drill feeds, Bellows-Locke drill feeds.

Branch Office

Ariz., Phoenix—3121 E. McDowell Rd. BR 5-0211
Calif., Glendale—926 Western Ave. CH 5-8911
Calif., San Diego—3694 Kettner Blvd. CY 8-7223
Calif., San Mateo—126 W. 25th Ave. FI 5-7812
Colo., Denver—1305 S. Ivanhoe Way. SK 6-1057
Ore., Portland—1222 S. E. Seventh Ave. BE 4-2672
Utah, Salt Lake City—559 S. Third W. EM 4-5874
Wash., Seattle—2 Hanford St. MU 2-1652

BESLY-WELLES CORP., 20 N. Wacker Dr., Chicago 6, Ill.

Cutting tools (taps, drills, reamers, and mills, counterbores, carbide tools), Gages, Machine tools, Abrasives.

Representatives

Calif., Los Angeles—Liberty Industrial Sales, 2010 E. Seventh St. TR 4037
Calif., San Francisco—Liberty Industrial Sales, 52 Zoe St. YU 2-0919
Ore., Newberg—James J. Stafford, Rt. 1, Box 103. Phone 1-7201

BIMBA HARDWARE & MFG. CO., 101 Main St., Monee, Ill.

Pneumatic cylinders and valves.

Representative

Calif., Los Angeles—Schumann Equipment Co., 5392 Alhambra Ave.

BINKS MANUFACTURING CO., 3114-44 W. Carroll Ave., Chicago 12, Ill.

Air compressors, Hoses (air), Regulators (pressure).

Branch Offices

Calif., Los Angeles—4915 Pacific Blvd. LU 1-0136
Calif., San Francisco—950 Newhall St. AT 2-4985
Wash., Seattle—514 Denny Way, MA 3-1350

Representatives

Calif., San Diego—C. E. McHugh, 1952 Rexford Dr. CO 2-1037
Colo., Denver—R. O. Day, 23 So. Depew Dr. BE 3-5284
Utah, Salt Lake City—Generator Supply Co., 1578 So. Second St. W. HU 7-7451

BODINE ELECTRIC CO., 2500 W. Bradley Pl., Chicago 18, Ill.

Reducer and non-reducer electric fractional hp. motors, 1/2000 to 1/4 hp. Over 3500 standard motors in all types and sizes.

Representatives

Calif., Los Angeles—Andrews Hardware & Metal Co., 336 So. Main St. MU 6111
Calif., Los Angeles—H. M. Hall and C. E. Mello, 406 So. Main St. MA 6-9159
Calif., Los Angeles—Minarik Electric Co., 224 E. 3rd St. MI 3161
Calif., San Francisco—J. F. Cady, 1485 Bayshore Blvd. JU 5-4108

BOGUE ELECTRIC MFG. CO., 52 Iowa Ave., Paterson 3, N.J.

Motors, Generators, Control panels, Rectifiers, Transformers.

Representative

Calif., Sherman Oaks—W. J. Hopkins, 13415 Ventura Blvd. ST 3-3470

BOND CO., CHARLES, 617 Arch St., Philadelphia 6, Pa.

BORG-WARNER—CASCADE

Drive bolting (leather), Couplings (shaft), Gears (bevel, helical, spur, worm), Speed reducers (worm gear).

Branch Office
Calif., Los Angeles—1044 W. 75th St.
Distributors
Calif., El Centro—Winn Supply Co., 354 E. Main
Calif., Long Beach—Bay City Bearing Co., 709 W. 16th St.
Calif., Los Angeles—Associated Gear & Machine Co., 829 Santa Fe Ave.
Calif., Maywood—Bay City Bearing Co., 5275 Atlantic Blvd.
Calif., Sacramento—Capital Machine & Welding Works, 83 No. 17th St.
Calif., San Diego—Winn Supply Co., 256 Seventh Ave.
Calif., San Francisco—Renstrom Gear & Machine Works, 514 Bryant St.
Calif., Stockton—Geiger Iron Works, Inc., Scotts Ave. and Pilgrim St.
Wash., Seattle—Chain Gear, Inc., 820-24 First Ave. So.

BORG-WARNER CORP., see **ROCKFORD CLUTCH DIV.**

BOSTON GEAR WORKS, Quincy 71, Mass.

Bearings (ball, sleeve), Chains for drives (roller), Collars (shaft), Couplings (shaft), Gearmotors, Gears (bevel, helical, spur, etc.), Gears (worm), Hangers (shaft), Pillow blocks, Reducers, speed (helical gear, shaft mounted, worm gear), Sprockets, Transmission—variable speed.

Branch Office
Calif., Los Angeles—1515 N. Kenwood Ave. TH 2-4492
Calif., Oakland—4770 San Pablo Ave. OL 4-4687
Wash., Seattle—10005 Rainier Ave. PA 5-1236

Representatives
Ariz., Phoenix—Garrett Supply Co., 29th & W. Thomas Grove. AP 8-5511
Calif., Los Angeles—Andrews Hardware & Metal Co., 334 So. Main St. MA 9-5030
Calif., Los Angeles—Garrett Supply Co., 3844 So. Santa Fe Ave. LU 8-7221
Calif., San Francisco—C. W. Marwedel, 1235 Mission St. UN 1-2125
Calif., San Jose—C. W. Marwedel, 1310 No. Tenth St. CY 7-8207
Calif., San Leandro—Republic Supply Co. of Calif., 1919 Williams St. EL 7-2211
Colo., Denver—Western Belting Co., 1720 Wazee St. AL 5-1476
Ore., Portland—J. E. Hazeltine & Co., 115 S.W. Second Ave. CA 8-7511
Utah, Salt Lake City—Industrial Supply Co., Inc., 121 Social Hall Ave. EM 3-6727
Wash., Seattle—Cragin & Co., 932 First Ave. So. MA 3-0052
Wash., Spokane—J. E. Hazeltine & Co., No. 1101 Division St. FA 7-4448

BRAMMER CORP., 486 Broadway, New York 12, N. Y.

Detachable V-link bolting.

Branch Office
Calif., Los Angeles—5738 Holmes Ave. LU 8-6296
Representatives
Ariz., Phoenix—Garrett Supply Co., 126 W. Madison St.
Calif., Los Angeles—Garrett Supply Co., 3844 Santa Fe Ave.
Calif., Los Angeles—Marshall Tool & Supply Co., 2850 E. Olympic Blvd.
Ore., Portland—Goodyear Rubber & Asbestos, 205 N. W. 5th Ave.

BRISTOL CO., P.O. Box 1790 WIP, Waterbury 20, Conn.

Recording, automatic controller, indicating, alarm and telemetering instruments for all measurable industrial functions.

Branch Office
Calif., Los Angeles—6800 E. Acco St. RA 3-9751
Calif., San Francisco—40 Berry St. GA 1-5462
Colo., Denver—4556 E. 46th Ave. DE 3-6228
Ore., Portland—2210 N. W. Roosevelt Ave. CA 6-2409
Wash., Seattle—101 Jones Bldg. MA 3-3361

BROS, INC., 1057 Tenth Ave. S.E., Minneapolis 14, Minn.

Shop-assembled water tube boilers, Field-erected water tube boilers, Dumping grate stokers, Continuous ash discharge stokers, Hi-Heat oil heaters.

Representatives
Calif., Los Angeles—Frank M. Beeson, 1511 W. 27th St. RE 5-9820
Colo., Denver—Lucas Eng. Co., 3321 Walnut St.
Ore., Portland—Robert E. Wiegand, 1415 N. E. Euclid Ave. AT 2-8809
Utah, Salt Lake City—James J. Burke Co., 422 W. Ninth St. EM 3-1001
Wash., Seattle—Arthur L. Benny, 7336-17th Ave. N. W.

BROWN & SHARPE MFG. CO., 235 Promenade St., Providence 1, R. I.
Geared, vane and centrifugal pumps. Gerotor hydraulic pumps and motors; Double A valves; Hydraulic power units; Precision tools and gages.

Calif., Los Angeles—3040 E. Olympic Blvd. Wash., Seattle—2023 Louisa St.

Representatives
(Available through most industrial distributors in the West)

BRUNING CO., THE, 601 So. 9th St., Lincoln 1, Neb.

Cylinders (air, hydraulic), Fittings and couplings (air, hydraulic), Hose (hydraulic).

Branch Office
Calif., Burbank—341 So. Orchard Dr. TH 2-2282

Representatives
Calif., Glendale—Haskel Engineering & Supply, 1236 So. Central. CI 4-8148
Calif., Millbrae—Haskel Engineering & Supply, 305 Adrian Rd. OX 7-4046
Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier. CA 2-3295
Wash., Seattle—Hydraulic & Air Equipment Co., 2450 6th Ave. So. MU 1681

BRUNNER DIV., DUNHAM-BUSH, INC., 1797 South St., W. Hartford 10, Conn.

Air compressors, Air conditioners (packaged), Refrigeration compressors, Refrigeration condensing units (open type, semi-hermetic).

Branch Office
Calif., Los Angeles—3520 Council St. DU 3-6471
Calif., San Francisco—760 Market St. EX 2-7382

Representatives
Calif., Fair Oaks—Larry Donnerwirth, 7445 San Nita Way. YO 7-6424
Calif., Los Angeles—Ronald S. Boreham, 1206 Maple Ave. RI 9-9251
Calif., Los Angeles—F. W. Kinzbach, 3520 Council St. DU 5-6471
Calif., Monterey Park—Done E. Rodger, 336 Alhambra Ave. DU 5-6471
Calif., Novato—Jerry Howarth, 515 Arthur Ave. TW 2-3509
Calif., San Leandro—Alfred R. Lowey, 14919 Lark St.
Calif., San Francisco—Robert H. Sanderson & Associates, 221-11th St.
Colo., Denver—Clyde L. Frey, 3610 Federal Blvd. GR 7-4120
N. Mex., Albuquerque—Vernon Congable, 633 Indiana St. E. AL 6-0749
Ore., Portland—Raymond G. Potter, 7310 N. E. Broadway. BE 4-7446
Ore., Portland—Jack G. Ward & Associates, 212 N. W. 14th Ave.
Utah, Salt Lake City—J. H. Hays Sales Co., 1655 Harvard Ave. PO 2221
Utah, Salt Lake City—Jerry Wilcox, 2280 S. 18th St. E.
Wash., Bellevue—Cecil V. Criteser, 15823 S. E. 24th St. MA 2-4630

BUCHANAN ELECTRICAL PRODUCTS CORP., 253 Rt. 22, Hillside, N.J.

Electrical components, connectors and fittings—Terminal blocks (heavy-duty one-piece blocks, AN type strips, sectional heavy-duty pre-SURE-blocks, sectional medium duty pre-SURE-blocks), Connectors (solderless connectors and insulators, solderless terminal lugs, solderless connector and lug installations, pre-SURE-tools and crimping dies), Fittings (conduit and box hardware and fittings).

Representatives
Ariz., Phoenix—Melvin C. Long, 422 So. 7th Ave. AL 3-2655
Calif., Los Angeles—Kenneth Anderson Co., 123 So. Myers St. MI 8517
Calif., Oakland—Fred Barber, 887 Trestle Glen Rd.
Calif., San Francisco—F. M. Nicholas Co., 714 Harrison St. YU 2-1964
Colo., Denver—Fred A. Pease, 4921 E. 38th St. FR 7-2336
Ore., Portland—Keeler, White Co., 322 N. W. Fourth Ave. CA 7-0593
Wash., Seattle—Keeler, White Co., 1041 Sixth Ave. So. EL 2367

BULLDOG ELECTRIC PRODUCTS CO., Box 177, Detroit 32, Mich.

Electrical power distribution and protection equipment.

See advertisement on page 27

Branch Office
Calif., Los Angeles—Bull Dog Electric of Los Angeles, 2885 E. Washington Blvd. AN 9-8101

Representatives
Calif., Oakland—Safety Switchboard Co., 910 89th Ave. LO 9-7001
Colo., Denver—Young Electric & Mfg. Co., 2134 Curtis St. AC 2-4841

Ore., Portland—Coast Electric & Mfg. Co., P.O. Box 7712. AT 8-5373

BUNTING BRASS & BRONZE CO., 715 Spencer St., Toledo 10, Ohio

Bearings, Bushings, Bars, Special parts of cast bronze and sintered metals.

Branch Office
Calif., Los Angeles—240 W. 18th St. RI 9-3549
Calif., San Francisco—277 Seventh St. UN 1-5044

Representatives
Calif., North Hollywood—Daniel Harland, 4133 Kraft Ave. PO 2-0128
Calif., San Mateo—Robert Johnson, 624 Rand St. DI 4-4308

BURGESS BATTERY CO., Foot of Exchange, Freeport, Ill.

Dry batteries, Reserve type power units.

Branch Office
Calif., Los Angeles—1855 Industrial St. MU 9141

BUSSMANN MANUFACTURING DIV., MCGRAW-EDISON CO., University at Jefferson, St. Louis 7, Mo. **Fuses.**

Branch Office
Calif., Los Angeles—1004 E. 4th St. MA 5-1954

Calif., San Francisco—2166 Market St. UN 3-3600

Wash., Seattle—513 E. 125th St. MA 2-0737

B/W CONTROLLER CORP., 2200 E. Maple Rd., Birmingham, Mich.

Liquid level controls, Solenoids, Motor starters.

Representatives

Calif., Berkeley—Geraty Engineering Specialties, 380 Colusa Ave. LA 5-5645

C & D BATTERIES, INC., Washington & Cherry Sts., Conshohocken, Pa.

Batteries for the mining industry, for marine service, for control, switchgear, and auxiliary power, for emergency lighting, for industrial and motorized lift trucks, for diesel locomotives, for railroad car lighting and air conditioning, for the communications industry and for fire-alarm systems.

Branch Office
Ariz., Phoenix—213 No. First Ave. AL 4-1383

Representatives

Calif., La Jolla—722 Fern Glenn. GL 4-6757

Calif., Los Angeles—Fred Pelletier Co., 1014 Venice Blvd. RI 9-4471

Calif., San Francisco—McCormick Morgan Co., 324 Fifth St. SU 1-6591

Colo., Denver—Howard Toncray, 1732 Blake St. CH 4-1102

Ore., Portland—208 S.W. Stark St. CA 8-9211

Wash., Spokane—Automotive Electric Co., E. 125 Mission St. FA 5-5379

CANNON ELECTRIC CO., 3208 Humboldt St., Los Angeles 31, Calif.

CA 5-1251

Electrical connectors for all types of battery or power circuits.

Representatives

Calif., Palo Alto—W. V. Brainard, 535 Middlefield Rd. DA 6-5421

Colo., Denver—Allen I. Williams Co., 2263 Albion St. SK 6-9403

Wash., Seattle—J. J. Backer Co., 221 W. Galer St. AT 3-6470

CAROL CABLE CO., 190 Middle St., Pawtucket, R. I.

Wire and cable (electric).

Representatives

Calif., Los Angeles—Jack Payne Co., Inc., 431 Colyton St. MA 4-7317

Calif., San Francisco—F. M. Nicholas, 714 Harrison St. YU 2-1964

Ore., Portland—Bruce-Emmett Co., 830 S. E. Alder St. BE 2-8117

Wash., Seattle—Bruce-Emmett Co., 1016 First Ave. So. EL 5006

CARTER CONTROLS, INC., 2800 Bernice Rd., Lansing, Ill.

Cylinders (air, hydraulic).

Representatives

Calif., Burbank—Roger Howell Co., 1802 W. Olive. VI 9-1803

Calif., Burlingame—Airdraulic Industrial Products Co., 1110 Carolan Ave. DI 3-2022

Ore., Portland—R. E. Bobbs Co., Airdraulics, 218 S.E. 12th Ave. BE 2-6133

Utah, Salt Lake City—Specialty Sales Co., 117 W. Second St. So. DA 2-5553

Wash., Spokane—Pollard & Co., P.O. Box 198. FA 7-9528

CASCADE MANUFACTURING CO., 2201 N.E. 201st Ave., Portland 20, Ore.

Cylinders (air, hydraulic), Lift truck attachments (hydraulically actuated).

CHAIN BELT CO., 4701 W. Greenfield Ave., Milwaukee 1, Wis. (also see SHAFER BEARING DIV.)

Bearings (roller), Chains for drives (detachable link, roller), Clutches, Collars (shaft), Couplings (shaft), Pillow blocks, Sprockets.

Branch Offices

Calif., Los Angeles—7601 Telegraph Rd. RA 3-4751
Calif., San Francisco—2940 Seventh St. TH 3-6801
Colo., Denver—110 16th St. CH 4-7467
Ore., Portland—2310 N.W. 24th Ave. CA 3-6121
Utah, Salt Lake City—375 S.W. Temple. DA 2-4311
Wash., Seattle—2425 Airport Way. MU 6750

Distributors

Ariz., Phoenix—Garrett Supply Co., P.O. Box 11038
Ariz., Phoenix—Edward D. Maltby Co., Inc., 120 So. Fourth Ave.
Ariz., Tucson—Tucson Bearing Co., 527 N. Stone Ave.
Calif., Bakersfield—All Bearing Service, Inc., 2728 Chester Ave.
Calif., Bakersfield—Hopper Machine Works, 301 W. 1st St.
Calif., El Centro—All Bearing Service, Inc.
Calif., El Centro—W. H. Douthitt Steel & Supply Co., P.O. Box 183, Route 1
Calif., El Centro—Winn Supply Co., 354 E. Main St.
Calif., Eureka—Bearings & Transmission, Fifth & B Sts.
Calif., Eureka—Eureka Boiler Works & Acme Foundry Co., Foot "S" St.
Calif., Fresno—Valley Foundry & Machine Works, 2510 So. East Ave.
Calif., Long Beach—Bay City Bearing Co., 709 W. 16th St.
Calif., Long Beach—Edward D. Maltby Co., 2041 W. Anaheim St.
Calif., Los Angeles—All Bearing Service, Inc., 325 W. 17th St.
Calif., Los Angeles—Bay City Bearing Co., Inc., 5275 Atlantic Blvd.
Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St.
Calif., Los Angeles—Garrett Supply Co., 3844 So. Santa Fe Ave.
Calif., Los Angeles—Republic Supply Co. of Calif., 2600 So. Eastland Ave.
Calif., Maywood—Edward D. Maltby Co., Inc., 4035 E. 52nd St.
Calif., Oakland—Bay City Iron Works, 4th and Washington Sts.
Calif., Oakland—Bearing Engineering Co., 1019 Harrison St.
Calif., Pomona—Reliable Bearing & Supply Co., 777 E. Second St.
Calif., Redding—Gerlinger Steel & Supply, 1539 Placer
Calif., Riverside—Reliable Bearing & Supply Co., 3545 Main St.
Calif., Sacramento—Capital Machine Welding Works, 83 No. 17th St.
Calif., San Bernardino—Reliable Bearing & Supply Co., 813 So. E St.
Calif., San Diego—All Bearing Service, Inc., 256 Seventh Ave.
Calif., San Diego—Edward D. Maltby Co., Inc., 745 15th St.
Calif., San Diego—Winn Supply Co., 256 7th Ave.
Calif., San Francisco—All Bearing Service, Inc., 456 Brannan St.
Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.
Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St.
Calif., San Jose—Bearing & Equipment Co., 52-56 Locust St.
Calif., San Leandro—Republic Supply Co. of Calif., 1919 Williams Ave.
Calif., Santa Maria—The Bearing House, P.O. Box 932, Pescadero Rd.
Calif., Stockton—Bearing Supply, 300 N. Wilson Way.
Calif., Stockton—Guntert & Zimmerman Sales Div., P.O. Box 1688
Calif., Taft—Hopper Machine Works
Calif., Ukiah—Klamath Machinery & Locomotive Works of Calif., 720 No. State St.
Calif., Ventura—The Bearing House, 1252 No. Ventura Ave.
Colo., Cripple Creek—Union Supply Co.
Colo., Denver—Bearing Service & Supply, 1850 Market St.
Colo., Denver—Colorado Bearing Co., 1601-11 Wazee St.
Colo., Denver—Union Bearing & Transmission Co., 1622 Wazee St.
Colo., Denver—Union Supply Co., 5460 Colorado Blvd.
Ida., Boise—Idaho Chain & Sprockets, Inc., 2400 Warm Springs Ave.
Ida., Boise—Western Bearings, Inc., 520 Front St.
Ida., Idaho Falls—Bearing Service & Supply Co., Air-Port Rd.
Ida., Lewiston—Jameson Machine & Sup. Co., 855 D St.
Ida., Pocatello—Paul Roberts Div., Steel Industrial Supplies, 850 So. Main St.

Ida., Twin Falls—Paul Roberts, 356 4th Ave.
Ida., Wallace—Bitco, Inc.
Mont., Billings—Bearings Supply Co., 15 No. 31st St.
Mont., Billings—Hall-Perry Machinery Co., 902 Central Ave.
Mont., Butte—Hall-Perry Machinery Co., 812 E. Iron St.
Mont., Great Falls—Hall-Perry Machinery Co., 1116 15th St. No.
Mont., Missoula—Hall-Perry Machinery Co., 127 E. Main St.
Nev., Reno—Pioneer Equipment Co. of Nevada, Kietzke Lane.
N. Mex., Albuquerque—Gorman Engineering Co. of New Mexico, 1330 N. 12th St.
N. Mex., Albuquerque—Montezuma Bearing Co., 1413 First St. N.W.
N. Mex., Carlsbad—Carlsbad Supply Co., P.O. Box 1042.
Ore., Baker—Basche-Sage Hardware Co., 2101 Main St.
Ore., Coos Bay—A. B. Daly Co., 824 N. Front St.
Ore., Eugene—Bearing Sales & Service, 225 Seventh Ave. W.
Ore., Eugene—Harmer Co., 209 Polk St.
Ore., Eugene—Oregon Supply Co., 250 W. Fourth St.
Ore., Klamath Falls—Klamath Machinery Co., 445 Spring St., P.O. Box 781.
Ore., La Grande—Basche-Sage Hardware Co., 1409 Adams Ave.
Ore., North Bend—Oregon Pacific Co., North Bend City Dock.
Ore., Portland—Bearing Sales & Service, 1045 N.W. Hoyt St.
Ore., Portland—Clyde Equipment Co., 1631 N.W. Thurman St.
Ore., Portland—General Bearing Co., 325 N.W. 15th Ave.
Ore., Portland—Harshverger Equipment Co., 425 S.E. Ninth Ave.
Ore., Portland—H. W. Sharp Co., 71 S.W. Oak St.
Ore., Prineville—Prineville Machine & Supply Co., P.O. Box 85
Ore., Roseburg—Bearing Sales & Service, 117 So. Stephens St.
Ore., Roseburg—Industrial Supply Co., 1928 Airport Rd.
Ore., Salem—Salem Steel & Supply Co., 180 Court St., P.O. Box 746
Utah, Helper—Carbon Transfer & Supply, P.O. Box 180
Utah, Ogden—Bearing Engr. Co. of Ogden, 1670 Washington Blvd.
Utah, Salt Lake City—Bearings Engineering & Sales Co., 756 So. Second W.
Utah, Salt Lake City—Bearings Service & Supply Co., 1207 So. Main St.
Wash., Aberdeen—Bearings Sales & Service, 317 E. Market St.
Wash., Aberdeen—Whitcher Machinery Co., 411 E. State St.
Wash., Everett—Everett Hardware Co., 2803 Grande Ave.
Wash., Everett—Everett Hardware Co., 2718 Broadway
Wash., Longview—Bearing Sales & Service
Wash., Seattle—All Bearing Service, Inc., 2741 Fourth Ave. So.
Wash., Seattle—C. M. Lovsted & Co., Inc., 4000 W. Marginal Way
Wash., Seattle—Washington Machinery Co., 7329 E. Marginal Way
Wash., Spokane—Bitco, Inc., E. 4145 Trent Ave.
Wash., Spokane—General Machinery Co., E. 3500 Block, Riverside Ave.
Wash., Tacoma—All Bearing Service Co., 2324 E. 11th St.
Wash., Tacoma—Bearing Sales & Service, Inc., 1718 Pacific Ave.
Wash., Walla Walla—Morrison Supply Co., 217 E. Alder St.
Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

CHANCE, A. B., CO., 210 N. Allen St., Centralia, Mo.

Anchors, Guying materials, Cutouts, Switches, Clamps, Connectors, Tools, Hoists, Fuses.

Branch Offices

Calif., San Francisco—815 Tennessee. MI 7-1300
Ore., Portland—1220 S. W. Stark St. CA 8-3866

Representatives

Calif., Woodland Hills—J. R. Rice, 23240 Ostronic Dr. DI 7-2202
Colo., Denver—M. R. Parkin, 1134 Kearney St. FL 5-8521

CHICAGO PNEUMATIC TOOL CO., 6 E. 44th St., New York 17, N. Y.

Stationary air and gas compressors in sizes to 5,000 hp. for pressures to 15,000 psi., Portable compressors in capacities to 900 cfm., Diesel engines from 120 to 2,280 hp.

Branch Offices

Calif., Los Angeles—6935 Bandini Blvd. RA 3-8731

CHAIN BELT—CLARK

Calif., San Francisco—855 Bryant St. HE 1-7928
Colo., Denver—465 Acoma St. RA 2-2813
Utah, Salt Lake City—156 W. Fourth St. EL 5-2985
Wash., Seattle—2901 First Ave. So. MA 2-3930

CHIKSAN CO., 330 N. Pomona Ave., Brea, Calif. JA 9-2121

Fittings and couplings (air, hydraulic), Joints (rotating, swivel).

Branch Office

Calif., Oakland—600 16th St. GL 2-4202

Representatives

Ariz., Phoenix—Cone & Wallace Co., 650 W. Vermont. CR 4-1600
Ore., Portland—Henry Kalz Co., 4023 No. Interstate Ave. TR 3558
Utah, Salt Lake City—The Lang Co., 1st So. 2nd West. Phone 3-5831
Wash., Seattle—E. C. Griffin Co., 539 1st Ave. So. EL 4216

CHRISTIE ELECTRIC CORP., 3410 W. 67th St., Los Angeles 43, Calif. PL 3-2607

Stavolt automatically regulated power rectifiers in Silicon; Rectodyne manually controlled power rectifiers.

Representatives

Calif., San Carlos—O. R. Dalton Associates, 132 El Camino Real. LY 1-2654
Kan., Wichita—L. J. Morefield Co., 713 Brookfield Rd. MU 6-7531 (Serves Colorado)
Wash., Seattle—Samuel N. Stroum Co., 1622 Broadway. EA 3-6117

CHRYSLER CORP., see AMPLEX DIV.

CIRCLE SEAL PRODUCTS CO., INC., 2181 E. Foothill Blvd., Pasadena, Calif. RY 1-0234, 5

Valves (air power line, hydraulic power line).

Representatives

Ariz., Cornville—Fred O. Rodgers, Phone 13
Calif., San Diego—Fowle Equipment Co., 1205 Cushman St. CY 8-9855
Calif., San Jose—Power Transmission, 84 Keyes St. CY 4-8181
Colo., Denver—Instrument Service Co., P. O. Box 5048. AL 5-2167
Wash., Seattle—Precision Valve Sales, Boeing Field, P.O. Box 15. PA 3-7602

CLARK CONTROLLER CO., 1146 E. 152nd St., Cleveland 10, Ohio.

Control centers, Controls (electric, electric motor), Switches (automatic, electric).

Branch Offices

Calif., Los Angeles—4755 E. 49th St. LU 3-6386
Calif., San Mateo—72 E. 3rd Ave. DI 2-6051

Representatives

Ariz., Phoenix—Reliable Electric Co., 802 W. Jefferson
Calif., Bell—Bell Wholesale Electric Co., 4346 E. Gage Ave.
Calif., Downey—Electrical Distributors, 8650 Cleta St.
Calif., El Monte—Black & Kindrick Electric Wholesale Co., 11614 McBean Dr.
Calif., Hollywood—Hollywood Wholesale Electric Co., 6820 Romaina St.
Calif., Inglewood—Inglewood Wholesale Electric, 923 So. Prairie Ave.
Calif., Long Beach—Mon-Arc Electrical Supply, 6635 Minnesota Ave.
Calif., Los Angeles—Associated Wholesale Electric, 1111 Santee St.
Calif., Los Angeles—Biddle Trade Bureau, Ltd., 2720 Beverly Blvd.
Calif., Los Angeles—Graybar Electric Co., Inc., 210 S. Anderson St.
Calif., Los Angeles—Industrial Wholesale Electric, 805 E. Pico Blvd.
Calif., Los Angeles—National Parts Distributors, 151 No. Vermont Ave.
Calif., Los Angeles—Thomas W. Simmons, 650 S. Grand Ave.
Calif., No. Hollywood—Cal-State Electric Supply Co., 5410 Vineland.
Calif., San Bernardino—Tri-County Electrical Wholesale Co., 453 So. 1st St.
Calif., San Bruno—Bergesen Wholesale Electric Co., 1051 San Mateo Ave.
Calif., San Diego—Pacific Wholesale Electric Co., 702 State St.
Calif., San Francisco—Buzzell Electric Works, 130 8th St.
Calif., San Francisco—Control Products Co., 750 Natoma St.
Calif., San Jose—Consolidated Parts, Inc., 581 E. Taylor St.
Calif., Santa Ana—Orange County Wholesale Electric Co., 1226 So. Main St.
Colo., Denver—Consolidated Parts, Inc., 1075 Galapago St.
Colo., Denver—Peterson Co., 4949 Colorado. DE 3-5434
Colo., Denver—Weiner Bros. Electric Supply Co., 1201 Stout St.

CLARY—CONTINENTAL SALES

Ida., Boise—C. W. Silver Co., 1118 N. 20th. Phone 2-6947
 Ida., Boise—Idaho Chain & Sprocket, Inc., P. O. Box 357
 Ida., Boise—Western Conveyor Co., 2801 Warm Springs Ave.
 Ida., Idaho Falls—Electrical Contractors Supply, P. O. Box 1157
 Ida., Idaho Falls—Rossiter Electric Sales & Service, 196 Capitol Ave.
 Ida., Pocatello—Electrical Contractors Supply, 205 So. 3rd Ave.
 Nev., Reno—Western Electrical Distributors Co., 253 Chestnut St.
 N. Mex., Carlsbad—H & E Electric Supply Co., 1036 No. Edward St.
 N. Mex., Farmington—State Electric Supply Co., Inc., P. O. Box 1531
 Ore., Albany—Albany Electric Shop, 220 E. 2nd Ave.
 Ore., Corvallis—Moore-Rane, Inc., P. O. Box 771
 Ore., Eugene—Vitus Electric Supply Co., 140 E. 5th Ave.
 Ore., Grants Pass—Electric Motor Works, 1725 Williams Secondary
 Ore., Portland—Clyde P. Carroll Machinery Co., 122 S.W. 1st Ave.
 Ore., Portland—Industrial Electric Supply Co., 727 S.W. Front St.
 Ore., Portland—Platt Electric Supply, Inc., 1305 N.W. Davis St.
 Ore., Portland—Andrew L. Polich, Inc., 734 N.W. Glisan. CA 3-6241
 Ore., Portland—C. E. Riggs, Inc., 317 N.W. Broadway
 Ore., Roseburg—Trowbridge Electric Co., 622 S.E. Jackson St.
 Utah, Orem—Roberts Electrical Wholesale Supply Co., State & Center Sts.
 Utah, Salt Lake City—C. W. Silver Co., 550 W. Seventh St. EL 5-5378
 Utah, Salt Lake City—Western Supply Co., 357 W. Second St.
 Wash., Aberdeen—Aberdeen Electric Co., Inc., 217 E. Market St.
 Wash., Pasco—Platt Electric Supply, 1515 Hickory St.
 Wash., Seattle—H. M. Denney Co., 111 W. Harrison. AT 4-0530
 Wash., Seattle—Globe Electric Supply Co., 215 Second Ave. So.
 Wash., Tacoma—Demick Electric Supply Co., 2919 Alaska St.
 Wash., Walla Walla—Berry Electric Co., 301 S. 3rd St.

CLARY DYNAMICS, 408 Junipero St., San Gabriel, Calif.
 Incremental motor, Servo-actuators, Valves.

CLAYTON MANUFACTURING CO., 401 No. Temple City Blvd., El Monte, Calif. CU 3-4131
 Generators (steam), Boilers (package).

Representatives
 Ariz., Phoenix—H. M. Craig, 1636 No. 26th Pl. BR 5-1674
 Calif., San Bernardino—G. F. Wheeler, Rt. 1, P.O. Box 331. Phone 9-3280
 Calif., San Gabriel—R. C. Welch, 356 Alhambra Terrace. AT 9-4320
 Colo., Littleton—S. F. Buscarello, 6376 So. Grant Ave. PY 4-3565
 Wash., Seattle—W. P. Currens, P.O. Box 9036, Queen Anne St. CA 3770

Distributors
 Ariz., Nogales—Motor Supply Co., 227 Grand Ave.
 Ariz., Phoenix—Hugh Craig Sales & Service Co., 1636 No. 26th Pl.
 Ariz., Phoenix—Kerstiens Parts & Machine, 1321 So. Central
 Calif., Emeryville—Besler Corp., 4053 Harlan St.
 Calif., Escondido—Webb Bros., Inc., 352 W. Grand Ave.
 Calif., Fresno—Service Welding & Boiler Shop, 250 Broadway
 Calif., Gardena—Oil Heating Equipment Co., 17826 So. Broadway
 Calif., Los Angeles—The American Laundry Machinery Co., E. Fourth St.
 Calif., Los Angeles—Cherry Burrell Corp., 4621 Pacific Blvd.
 Calif., Los Angeles—E. L. Chrisman Co., Inc., 8255-63 Compton Ave.
 Calif., Los Angeles—Garlinghouse Fremont Co., 6046 E. Washington Blvd.
 Calif., Los Angeles—Green Spot, Inc., 1501 Beverly Blvd.
 Calif., Los Angeles—Howard Supply Co., Inc., 5125 Santa Fe Ave.
 Calif., Los Angeles—Oil Well Heating Systems, Inc., National Oil Bldg., 6th & Grand Ave.
 Calif., Los Angeles—Pantex Mfg. Co.
 Calif., Los Angeles—Prosperity Co., 2484 W. Washington Blvd.
 Calif., Redwood City—Western Power Equipment Corp., 909 Broadway
 Calif., San Diego—Standard Iron Supply, Inc., 1821 Harbor Dr.

Calif., San Francisco—Cherry Burrell Corp., 2675 Folsom St.
 Calif., San Francisco—West Coast Laundry Machinery Co., 3246 17th St.
 Colo., Denver—Armitage Sales & Service, 591 Utica St.
 Colo., Denver—Ferrin Service Co., 1360 W. Cedar Ave.
 Colo., Denver—Hurley Co., Inc., 2140 Market St.
 Colo., Denver—Landes, Zachary & Peterson, Inc., 275 Kalamath St.
 Colo., Denver—Pantex Mfg. Co.
 Colo., Denver—Wagner Machine & Mill Supply, Inc., 4444 York St.
 Colo., Grand Junction—Landes, Zachary & Peterson, Inc.
 Ida., Boise—Engineering Sales & Service, Inc., 410 Capital Blvd.
 N. Mex., Albuquerque—Landes, Zachary & Peterson, Inc., 1609 2nd N.W.
 Ore., Eugene—Surco System, 347½ W. Fifth St.
 Ore., Portland—Cramer Machinery Co., 404 N.W. Tenth Ave.
 Ore., Portland—G & M Steamer Service, 1834 S.E. Ash St.
 Ore., Portland—Monroe Food Machinery, Inc., 1600 S.W. Harbor Dr.
 Ore., Portland—A. W. Mortensen Co., 1117 S.E. Morrison
 Ore., Portland—Star Machinery Co., 801 So. Front Ave.
 Utah, Salt Lake City—Heatway Sales Co., 2319 So. Main St.
 Utah, Salt Lake City—Lindquist Boiler Co., 1374 So. State St.
 Utah, Salt Lake City—Monroe Food Machinery, Inc., 130 So. Fourth St.
 Wash., Seattle—Automotive Parts & Equipment Co., 1518 11th Ave.
 Wash., Seattle—Monroe Food Machinery, Inc., 1226 First Ave. So.
 Wash., Seattle—Northern Commercial Co., 811 First Ave.
 Wash., Seattle—Prosperity Co., 617 Harrison St.
 Wash., Seattle—Star Machinery Co., 241 Lander St.
 Wash., Seattle—Troy Laundry Machinery Co.
 Wash., Spokane—Monroe Food Machinery, Inc., 715 Madelia
 Wash., Spokane—Star Machinery Co., 415 E. Sprague Ave.
 Wyo., Casper—Casper Supply Co., 444 So. Center St.
 Wyo., Casper—Moss Equipment Supply Co., 3100 E. Yellowstone

CLEAVER-BROOKS, 326 E. Keefe Ave., Milwaukee 12, Wis.

Boilers (Packaged fire tube, steam or hot water, oil, gas, combinations fired, 15-600 hp.)

Representatives
 Ariz., Phoenix—Carns-Hoaglund Sales Co., 420 No. 15th Ave. AL 8-2793
 Calif., Los Angeles—Heat & Power Equipment Co., 3430 Sunset Blvd. NO 3-3265
 Calif., San Francisco—R. F. MacDonald Co., 1485 Bayshore Blvd. JU 4-0648
 Colo., Denver—Industrial-Denver Co., 1660 11th St. AC 2-4791
 Mont., Billings—Lefler Engineering Sales, 108 N. 23rd St. Phone 2-2105
 N. Mex., Albuquerque—Boyd Industrial Engineering, Inc., 112 Granite, N. W. Phone 3-2247
 Utah, Salt Lake City—The Lang Co., 267 W. First St. DA 8-8341
 Wash., Seattle—Power & Controls, Inc., 5505 17th Ave., N.E. HE 3819

CLEVELAND CONTROLS, INC., 1111 Brookpark Rd., Cleveland 9, Ohio
 Control centers, Controls (electric), Instruments (measuring and testing), Panelboards (electric), Switches (air safety).

Representatives
 Ariz., Phoenix—Cone & Wallace Co., 1325 S. 26th St. BR 5-4496
 Calif., Los Angeles—R. P. Carmien Co., 406 S. Main St. MA 2-0025
 Calif., San Francisco—General Combustion Equipment Co., 67 Beale St. EX 7-0441
 Colo., Denver—Automatic Control & Equipment Co., 3750 Pecos St. GE 3-8436
 Hawaii, Honolulu—Dumont-Irvine Co., Ltd., 450 Pikoili St.
 Ore., Portland—Cascade Equipment Co., 216 N. E. Oregon St. BE 4-7433
 Utah, Salt Lake City—Power Engineering Co., 1806 S. State St. IN 7-6838
 Wash., Seattle—Control & Steam Equipment Co., 422 Smith Tower. EL 6622

CLEVELAND WORM & GEAR CO., 3249 E. 80th St., Cleveland 4, Ohio
 Drives (variable speed), Gears (worm), Reducers, speed (worm gear), Transmission, variable speed.

Representatives
 Calif., Los Angeles—Mark-Costello Co., 6511 Whittier Blvd. RA 3-4696
 Calif., San Francisco—Milligan-Spika Co., 1485 Bayshore Blvd. JU 5-8153

Colo., Denver—H. G. Goble Co., 1737 Franklin St. MA 3-6976
 Ore., Portland—Bearing Sales & Service, Inc., 1645 N.W. Hoyt St. CA 3-6301
 Utah, Salt Lake City—Sales Engineering Co., Inc., 526 W. 8th So. St. EL 5-1162
 Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 2-0331

CLIPPER BELT LACER CO., 974 Front Ave., N.W., Grand Rapids 2, Mich.
 Belt lacing equipment.

Branch Office
 Calif., Oakland—2511 Broadway. TE 2-0348
COLLYER INSULATED WIRE CO., INC., 249 Roosevelt Ave., Pawtucket, R. I.

Electric wire cables and cords.
Representatives
 Calif., Los Angeles—Allied Industries, 412 Seaton St. MU 2244
 Calif., San Francisco—The Baxter Co., 101 Kansas St. MA 1-8636
 Ore., Portland—Bruce-Emmett Co., 830 S.E. Alder St. BE 2-8117
 Wash., Seattle—Bruce-Emmett Co., 1016 First Ave. So.

COMBUSTION ENGINEERING, INC., 200 Madison Ave., New York 16, N. Y.

Boilers (all types), Stokers, mechanical (all types).

Branch Offices
 Calif., Los Angeles—510 W. 6th St. TR 6828
 Calif., San Francisco—155 Sansome St. YU 2-6262
 Wash., Seattle—Skinner Bldg. SE 5218

Representative
 Utah, Salt Lake City—Joy & Cox, Inc., 415 Judge Bldg. EM 4-5124

COMMERCIAL SHEARING & STAMPING CO., 1775 Logan Ave., Youngstown, Ohio

Controls (fluid power), Motors, Pumps, Valves.

Branch Office
 Utah, Salt Lake City—P.O. Box 2036. HU 4-4491

CONGRESS DRIVES DIV., 3750 E. Outer Dr., Detroit 34, Mich.

Pulleys, Flexible couplings, Shaft collars, Pillow blocks, Flange bearings, FHP V-belts.

Representatives
 Colo., Denver—C. C. Warner, 3063 Albion St. MU 7235
 Ore., Portland—Ed Lokay, 10340 N.E. Sandy Blvd. AL 4-7378

CONTINENTAL ELECTRIC CO., INC., 325 Ferry St., Newark 5, N. J.
 Generators (electric), Motors (electric DC, poly-phase AC).

Branch Office
 Calif., Los Angeles—1709 W. 8th St. HU 3-7931

CONTINENTAL GIN CO., 4500 Fifth Ave. So., Birmingham 2, Ala.

Belt conveyors, Screw conveyors, Bucket elevators, Power transmission equipment, Special machinery.

Branch Offices
 Calif., San Francisco—235 Montgomery St. YU 2-9374
 Colo., Evergreen—Rt. 1. CR 9-1727

CONTINENTAL SALES & SERVICE CO., 3817 Santa Fe Ave., Los Angeles, Calif.

Aircraft engines, Internal combustion engines (gasoline, butane, diesel, natural gas).

Branch Offices
 Calif., Covina—780 Cypress. ED 2-5152
 Calif., Mountain View—P.O. Box 805. YO 7-5048
 Calif., San Mateo—4102 Beresford. FI 1-0866

Distributors
 Alaska, Anchorage—Airport Machinery Co., Inc., Fifth Ave. at Merrill Field.
 Ariz., Phoenix—Automotive Sales Co., 146 So. Second Ave.
 Ariz., Tucson—State Tractor & Equipment Co., 1202 N. Main St. MA 4-2335

Calif., Bakersfield—Glenn Rose Engine Co., 502 So. Real Rd.
 Calif., Fresno—Art Schedler's Engine Builders, 624 Broadway
 Calif., El Centro—Valley Auto Supply Co., 633 State St.
 Calif., Long Beach—Smith & Thorp, 141 E. Anaheim St.

Calif., Los Angeles—Harval Truck Equipment Co., 1000 E. Eighth St.
 Calif., Maywood—M & M Truck Parts, 3501 E. Slauson

Calif., Modesto—Barnes Machine Shop, 615 Third St.
 Calif., Oakland—California Equipment Co., 1724 Cypress St.

Calif., Sacramento—Gerlinger Motor Parts, 2020 Kay St.

Calif., San Diego—Auto Gear & Supply, 1389 State St.
 Calif., San Francisco—California Equipment Co., 660 Bryant St.
 Calif., San Jose—Penniman & Richards, 493 So. Market St.
 Calif., Santa Ana—Blystone Equipment Co., 2649 W. First St.
 Calif., Santa Ana—James Requarth, 111 Spurgeon St.
 Calif., Stockton—Automotive Parts Co., 244 No. Hunter St.
 Hawaii, Honolulu—Hawaiian Equipment Co., P.O. Box 2990
 Ida., Idaho Falls—Automotive Equipment & Supply Co., 385 Airport Rd.
 Ida., Twin Falls—Motor Mercantile Co., 434 Main Ave. So.
 Nev., Las Vegas—Blystone Equipment Co., 2840 Fremont
 Ore., Portland—Automotive Equipment Co., 311 N.E. Oregon St.
 Utah, Ogden—Motor Mercantile Co., 2587 Grant Ave.
 Utah, Salt Lake City—Motor Mercantile Co., 54 W. Seventh St.
 Wash., Longview—Kellogg Automotive, 1340 Vanderhook Way
 Wash., Moses Lake—Skaggs Automotive, Inc., 506 E. Third St.
 Wash., Seattle—A. H. Cox & Co., 1757 First Ave. So.
 Wash., Spokane—Skaggs Automotive, Inc., 1107 W. Second Ave.

COOK, H. N., BELTING CO., 401 Howard St., San Francisco 5, Calif. DO 2-6681

Belting drive (chain or link), Belting, drive (composition, leather, rubber), Belts, V (composition, leather, rubber), Chains for drives (roller), Hose (air, flexible metallic, hydraulic), Pulleys, Sheaves, Sprockets.

COOPER SPLIT ROLLER BEARING CORP., Box 526, Locust St., Carnegie, Pa.

Split roller bearings, Pillow blocks.

Representatives
 Alaska, Anchorage—Bearing Engineering & Supply Co., 620 C St.
 Ariz., Phoenix—Edward D. Maltby Co., 120 So. Fourth Ave. AL 2-5251
 Calif., Long Beach—E. D. Maltby Co., 2041 W. Anaheim St. HE 2-5494
 Calif., Los Angeles—C. M. Lovsted & Co., 1001 N. Main St. CA 1-4202
 Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa St. RI 7-9191
 Calif., Los Angeles—Pacific Bearings, 1210 So. Hope St. PR 3371
 Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LO 5-5304
 Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251
 Calif., San Diego—Edward D. Maltby Co., 745 15th St. BE 3-7278
 Calif., San Francisco—Bearing Engineering Co., 1545 Mission St. HE 1-1500
 Calif., San Francisco—H. J. Wickert & Co., Inc., 770 Folsom St. YU 6-5800
 Colo., Denver—Bearing Service & Supply Co., 4433 Claude Ct. AC 2-5991
 Colo., Grand Junction—Bearing Service & Supply Co., 12th & Ute Sts.
 Ida., Boise—Western Bearings, Inc., 520 Front St. Phone 2-6583
 Ida., Idaho Falls—Bearing Service & Supply Co.
 Ida., Pocatello—Western Bearings, Inc., 156 So. Third St. Phone 3518
 Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W. Phone 4208, 9
 Mont., Billings—Bearing Supply Co., Second Ave. and 12th St. No. Phones 9-1195, 9-3827
 Nev., Reno—Sierra Machinery Co., Inc., 307 Morrill Ave. Phone 3-1301
 Ore., Eugene—Bearing Sales & Service, 225 Seventh Ave. W. DI 5-0325
 Ore., Portland—Bearing Sales & Service, 1645 N.W. Hoyt St. CA 3-6301
 Ore., Portland—J. W. Minder Chain & Gear Co., 307 S. E. Hawthorne Blvd. BE 6-1131
 Ore., Roseburg—Bearing Sales & Service, 729 S.E. Stephens St. OR 2-2603
 Utah, Salt Lake City—Bearing Service & Supply Co., 1207 So. Main. IN 6-8776
 Wash., Aberdeen—Bearing Sales & Service, 317 E. Market St. AB 5820
 Wash., Everett—Bearing Sales & Service, 2803 Grand Ave. CE 1185
 Wash., Longview—Bearing Engineering & Supply Co., 1011 15th Ave.
 Wash., Longview—Bearing Sales & Service, 1131 Commerce Ave. HA 5-1850
 Wash., Pasco—Bearing Sales & Service Co., 319 W. Clark St. LI 7-2421
 Wash., Port Angeles—Bearing Sales & Service Co., Valley at Second. GL 2-2307
 Wash., Seattle—Bearing Engineering & Supply, 2548 Airport Way at Lander St. MA 2744
 Wash., Seattle—Bearing Sales & Service, 2908 Sixth Ave. So. MU 0331

Wash., Seattle—C. M. Lovsted & Co., Inc., 4000 W. Marginal Way. AV 4000
 Wash., Spokane—A. G. Mohn Co., E. 102 Sprague Ave. MA 2109
 Wash., Tacoma—Bearing Sales & Service, 1743 Jefferson St. FU 3-5363
 Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

COPES-VULCAN DIV., BLAW-KNOX CO., 939 W. 26th St., Erie 4, Pa.

Blowers (soot), Boiler feed water regulator, Controls (combustion), Desuperheaters, Governors (pump), Regulators (pressure), Valves (pressure reducing).

Representatives
 Calif., Los Angeles—Gil Moore & Co., 310 No. Normandie Ave.
 Calif., San Francisco—John Morley, 1001 Tennessee St.
 Colo., Denver—Hank Thurstin Co., 475 Acoma St.
 Utah, Salt Lake City—C. H. Spencer & Co., 210 W. 33rd St.
 Wash., Seattle—Pacific Steam Control Co., 4003 Aurora Ave.

CORNELIUS CO., 550 39th Ave. N. E., Minneapolis 21, Minn.

Air compressors (portable).

Representative
 Calif., Los Angeles—U. S. Divers Co., 11201 West Pico Blvd. BR 2-7905

CULLMAN WHEEL CO., 1344 Altgeld, Chicago 14, Ill.

Chains for drives (detachable link, roller, silent transmission, other), Couplings (shaft), Sprockets.

Warehouse
 Calif., Los Angeles—4395 E. Olympic Blvd. AN 9-9435

Representatives
 Ariz., Phoenix—Lee Redman, P. O. Box 151
 Calif., Fresno—Elliott Mfg. Co., 1735 Ventura St.
 Calif., Fresno—Geo. M. Philpott Co., 2376 S. Railroad Ave.
 Calif., Los Angeles—B & B Supply Co., 4849 Telegraph Rd.
 Calif., Los Angeles—Bearing Specialty Co., 225 W. 27th St.
 Calif., Marysville—Marysville Tractor & Equipment, 712 Third St.
 Calif., Maywood—Bearing Specialty Co., 4610 E. Slauson
 Calif., Oakland—Geo. M. Philpott Co., 2928 Poplar St.
 Calif., Oxnard—Barnes Duff Co., P. O. Box 101
 Calif., Sacramento—Geo. M. Philpott Co., 6260 Folsom Blvd.
 Calif., Salinas—Seaboard Equipment Co., 14 Murphy St.
 Calif., San Bernardino—Grant H. Musick Co., 595 S. Arrowhead
 Calif., San Francisco—Geo. M. Philpott Co., 1060 Bryant St.
 Calif., San Jose—Kronk Machine & Mfg., 566 W. Julian
 Calif., Stockton—Geiger Iron Works, Scott & Pilgrim Sts.
 Colo., Denver—Colorado Ind. Supply, 1620 Wazee St.
 Colo., Denver—Hendrie & Bolthoff, 1635 17th St.
 Colo., Grand Junction—Pacific & Western Ind. Supply, 808 S. Ninth St.
 Colo., Pueblo—Motor Supply Co., P. O. Box 814
 Ida., Jerome—Bishops, 214 West Ave.
 Ore., Portland—Geo. M. Philpott Co., 2353 N. W. 21st Ave.
 Utah, Ogden—Geo. W. Goddard, 24th & Wall Sts.
 Wash., Seattle—Berg Evans Trans. Co., 616 Sixth Ave.

CURTIS MANUFACTURING CO., 1905 Kienlen Ave., St. Louis 20, Mo.

Air compressors (portable, stationary), Cylinders (air).

Representatives
 Calif., Berkeley—R. K. McCoy, 3033 San Pablo. AS 3-6726
 Calif., Los Angeles—L. L. Meikle, 2844 So. Grand. RI 8-0151
 Ore., Portland—L. L. Meikle, 1018 S.E. Eighth. BE 4-7469

CUTLER-HAMMER, INC., 315 No. 12th St., Milwaukee 1, Wis.

Circuit breakers, Clutches, Control centers, Controls (electric, electric motor), Load centers, Panelboards (electric), Regulators (pressure), Switches (automatic, electric), Transmissions, variable speed.

Branch Offices
 Calif., Fresno—155 Van Ness Ave. AM 8-3301
 Calif., Los Angeles—6431 Bandini Blvd. RA 3-8391
 Calif., Sacramento—1331 T St. GI 2-2351
 Calif., San Francisco—2130 Third St. HE 1-3855
 Colo., Denver—126 W. 5th Ave. SH 4-2495
 Ore., Medford—1320 Queen Anne Ave. SP 2-7248

Ore., Portland—208 S.W. Stark St. CA 7-2405
 Utah, Salt Lake City—165 So. 1st W. EM 3-5013
 Wash., Seattle—619 8th Ave. So. EL 4032
 Wash., Spokane—E. 1717 Thurston Ave. MA 4-9702

DAYTON RUBBER CO., 2342 W. Riverview Ave., Dayton 7, Ohio.

Belts, V (rubber), Belting, drive (rubber).

Branch Office
 Calif., Los Angeles—909 E. Slauson Ave. AD 4-0111

Representatives
 Ariz., Phoenix—J. E. Redmond Supply Co., 625 W. Madison St.
 Calif., Bakersfield—Power & Trans. Equip. Co., 109 23rd St.
 Calif., San Francisco—H. N. Cook Belting Co., 401 Howard St.
 Ore., Portland—J. E. Hazeltine Co., 115 S. W. 2nd Ave.
 Utah, Salt Lake City—Six States Distrib., Inc., 1555 S. 2nd W.

DEGEN, L. P., BELTING CO., 260 Mission St., San Francisco 5, Calif. EX 2-2820

Packing (leather, rubber), Belting (leather, rubber, cotton), V-belts, Hose (water, air, hydraulic, gasoline) Hose (fittings, couplings), Lacing (belt), Sheaves, Pulleys.

DELCO-REMY DIV., GENERAL MOTORS CORP., 2401 Columbus Ave., Anderson, Ind.

Batteries, Generators (electric), Motors (electric, DC.), Switches (electric).

Branch Office
 Calif., Los Angeles—1707 Kelton Ave. GR 3-7965

Representatives
 Products sold through United Motors System offices in all major Western locations.

DELTA-STAR ELECTRIC DIV., H. K. PORTER CO., INC., 2437 Fulton St., Chicago 12, Ill.

Ducts, Substations, Switches, Switchgear equipment, Transformers.

Branch Office
 Calif., Los Angeles—Broadway Arcade Bldg. MA 6-5651, 2

Representatives
 Ariz., Phoenix—Daley Electric Sales Co., Inc., 1825 E. Jefferson St. AL 2-2326
 Ariz., Tucson—Daley Electric Sales Co., 5751 E. Whittier St. AX 8-5378
 Calif., San Francisco—C. E. Ingalls & Sons, 681 Market St. GA 1-2916
 Colo., Denver—Mountain States Machinery Co., 1526 Blake St. CH 4-7421, 2
 Ore., Portland—Shaffer & Nelson, Inc., 139 S. E. Taylor St. BE 4-7437, 8
 Utah, Salt Lake City—John E. Elggren, P. O. Box 388. EM 3-3945, 6
 Wash., Seattle—Shaffer & Nelson, Inc., 312 Occidental Ave. MU 2-0186, 7
 Wash., Spokane—Shaffer & Nelson, Inc., P. O. Box 198. FA 5395

DENISON ENGINEERING DIV., AMERICAN BRAKE SHOE CO., 1160 Dublin Rd., Columbus 16, Ohio.

Controls (hydraulic), Cylinders (hydraulic), Fluid Drives, Motors (hydraulic), Pumps (hydraulic power), Transmission, variable speed, Valves (hydraulic power line).

Branch Office
 Calif., Hawthorne—1651 E. El Segundo Blvd. PL 7-2246

DENSMORE ENGINEERING CO., INC., 235 E. Greenleaf St., Compton, Calif.

Hydraulic telescopic cylinders, Hydraulic ASAE type cylinders, Hydraulic machine tool type cylinders, Hydraulic cylinders to customers' specifications, Pneumatic (air) cylinders to customers' specifications, Pneumatic cylinders belted type, Special hydraulic valves.

Branch Offices
 Calif., Oakland—2003 E. 14th St. KE 2-0690
 Colo., Denver—5975 Colorado Blvd. AT 8-3273
 Wash., Seattle—8410 Dallas Ave. LA 0911

Representatives
 Ariz., Buckeye—O. S. Stapley Co.
 Ariz., Casa Grande—O. S. Stapley Co.
 Ariz., Chandler—O. S. Stapley Co.
 Ariz., Coolidge—O. S. Stapley Co.
 Ariz., Glendale—O. S. Stapley Co.
 Ariz., Maricopa—O. S. Stapley Co.
 Ariz., Mesa—O. S. Stapley Co.
 Ariz., Phoenix—O. S. Stapley Co., 723 Grand Ave.
 Ariz., Stafford—Lines Co., 722 Main St.
 Ariz., Tucson—Hydraulic Sales & Service Co., 3857 E. 40th St. EA 7-2755
 Calif., Anaheim—Allied Equipment Distributors, 1541 Lincoln Ave. KE 5-6091

DETROIT—DURANT

Calif., Bakersfield—Hydraulic Jack Co., 503 24th St. FA 3-5666
Calif., Bell Gardens—Paul Munroe Co., 6430 E. Gage. LU 7-5226
Calif., Eureka—Eureka Boiler Works, HI 3-1681

Calif., Fresno—Central Supply Co., 424 M St. Phone 8-4765
Calif., Glendale—Carl J. Kennedy Co., 1105 No. Pacific Ave. CH 5-3145
Calif., Los Angeles—Circle Seal Supply Co., 4863 Telegraph Rd. AN 9-8289
Calif., Los Angeles—Cook Bros. Equipment Co., 3334 San Fernando Rd. CL 6-3152
Calif., Los Angeles—Fornaciari Co., 5350 E. Washington Blvd. AN 9-7595
Calif., Los Angeles—Palley Supply Co., 2263 E. Vernon. LU 8-1153
Calif., Oakland—George A. Kushman Co., 2003 E. 14th St. KE 2-0690
Calif., San Diego—General Industrial Supply Co., 1115 F St. BE 4-6767
Calif., San Francisco—Transmission Engineering Co., 427 Bryant St. SU 1-4738
Calif., San Jose—Power Transmission Engineering Corp., 84 Keyes St. CY 4-8181
Calif., South Gate—Hydraulic Tool & Equipment Co., Inc., 10825 Sessler St. LO 7-2409

Calif., Winton—G & M Equipment Co., P.O. Box 98. EL 8-5677
Colo., Denver—Hydraulic Service & Supply Co., 5975 Colorado Blvd. AT 8-3273
Nev., Las Vegas—Inland Service & Supply Corp., 300 W. Wyoming St. DU 2-6186
Ore., Portland—Western Machinery Corp., 1035 S.E. Ninth Ave. BE 6-4117
Utah, Salt Lake City—Rains Co., 1053 So. Second W. EM 4-2683
Wash., Seattle—Spencer Aircraft Industries, Inc., 8410 Dallas Ave. LA 0911
Wash., Seattle—Stephen Thurlow Co., Rm. 203, 1731 First Ave. So. MU 5488
Wash., Yakima—Central Chain & Transmission Co., Inc., 709 So. First St. GL 7-6188

DETROIT DIESEL ENGINE DIV., GENERAL MOTORS CORP., 13400 W. Outer Dr., Detroit 28, Mich. KE 1-7100

General Motors two-cycle Detroit Diesel engines, ranging from 30 to 893 hp.

Branch Office
Calif., San Francisco—1426 Russ Bldg. EX 7-0273

Distributors
Ariz., Phoenix—Diesel Service Co., 1914 E. Buchanan. AL 8-9686
Calif., Berkeley—Williams & Lane, Inc., 1077 Eastshore Hwy. LA 6-0521
Calif., Los Angeles—Anderson-O'Brien Co., 746 E. Washington Blvd. RI 9-7795
Calif., San Diego—Crofton Diesel Engine Co., Inc., G St. Pier. BE 3-7311
Colo., Denver—Colorado Builders, 1534 Blake St. WE 5-3571
Ida., Boise—Southern Idaho, 204 E. Myrtle St. Phone 3-6409
Nev., Reno—Sierra Machinery Co., 307 Morrill Ave. FA 3-1301
N. Mex., Albuquerque—Southwest Engine Co., Inc., 1510 Second St. N.W. CH 7-1327
Ore., Portland—Gunderson Bros. Engineering, 225 N.W. 14th. CA 3-8171
Utah, Salt Lake City—Cate Equipment Co., Inc., 1132 So. Fourth W. St. EL 9-2021
Wash., Seattle—Evans Eng. & Equipment Co., 4300 14th Ave. N.W. SU 3-9000
Wash., Spokane—Intermountain Equipment, 611 E. Sprague. TE 8-2521

DETROIT STOKER CO., 1510 E. First St., Monroe, Mich.
Stokers.

Representatives
Calif., San Francisco—C. C. Moore & Co., Engr., 450 Mission St. GA 1-3484
Colo., Denver—Hendrie & Bolthoff Co., 1635 17th St. KE 4-4111
Ore., Portland—C. C. Moore & Co. Engr., 1120 Falling Bldg. CA 8-9684
Utah, Salt Lake City—North-Monsen Co., 535 So. Second W. St. DA 2-1343
Wash., Seattle—C. C. Moore & Co. Engr., 417 Smith Tower. MA 1496

DE VILBISS CO., 300 Phillips Ave., Toledo 1, Ohio

Air compressors (portable, stationary), Hose (air), Regulators (pressure).

Branch Office
Calif., Los Angeles—6811 E. Slauson Ave. RA 3-6307
Calif., San Jose—1335 N. Tenth St. CY 7-1820

DIAMOND CHAIN CO., INC., 402 Kentucky Ave., Indianapolis 7, Ind.
Chains for drives (detachable link, roller), Couplings (shaft), Sprockets.

See advertisement on page 61

Branch Offices

Calif., Los Angeles—900 Santa Fe Ave. VA 1723
Calif., Menlo Park (San Francisco)—595 Santa Cruz. DA 8-4940

Representatives

Ariz., Flagstaff—Semon Industrial & Welding Supply Co., 27 Mikes Pike
Ariz., Phoenix—Semon Bearing & Supply, 325 No. 3rd Ave. AL 8-7566
Ariz., Tucson—Tucson Bearing Co., Inc., 527 No. Stone Ave. Phone 3-3618
Calif., Arcata—Reliable Hardware Co., Inc., 11th & M Sts. VA 2-0378
Calif., Bakersfield—Power Transmission Equipment, 109 Twenty-third. Phone 5-8601
Calif., Fresno—Pacific Mill & Mine Supply, 530 Van Ness Ave. Phone 4-5924
Calif., Los Angeles—Degen Fiege, 4559 E. Sheila St. RI 8-2281

Calif., Los Angeles (South Gate)—Power Transmission Equipment, 4501 Firestone. LO 4-2551

Calif., Sacramento—Western Industrial Supply Co., 905 G St. GI 2-7264

Calif., San Francisco—Horsford Bros., 944 Folsom St. SU 1-0657

Calif., San Francisco—Monarch Corp. (Supply Div.), 55 New Montgomery. GA 1-7724

Calif., San Leandro—Monarch Corp. (Supply Div.), 2075 Williams. SW 8-0980

Calif., Santa Clara—Monarch Corp. (Supply Div.), 2455 The Alameda. AX 6-1025

Calif., Stockton—Hickinbotham Bros., Ltd., 536 So. Aurora. HO 6-9541

Colo., Denver—Colorado Bearing Co., 1618 Wazee St. MA 3-1218

Ida., Boise—Idaho Chain & Sprocket, Inc., 2400 Warm Springs. Phone 3-8392

Ida., Boise—Western Conveyor Co., 2801 Warm Springs Ave. Phone 3-5464

Mont., Billings—Great Northern Tool & Supply Co., 2224 Minnesota Ave.

Mont., Billings—Power Transmission Equipment Co., P.O. Box 988. Phone 4-4185

Mont., Cutbank—Great Northern Tool & Supply Co.

Mont., Kevin—Great Northern Tool & Supply Co.

N. Mex., Albuquerque—Harry Cornelius Co., 1510 Second St. N.W. Phone 3-1776

Ore., Brookings—Reliable Hardware Co., Inc. 234 Wharf St. Phone 2781

Ore., Eugene—Bearing Sales & Service, Inc., 225 7th Ave. W. DI 5-0325

Ore., Portland—Bearing Sales & Service, Inc., 1645 N.W. Hoyt St. CA 3-6301

Ore., Portland—Woodbury & Co., 5851 No. Lagoon. CA 8-6641

Ore., Roseburg—Bearing Sales & Service, Inc., 460 N.E. Garden Valley Rd.

Utah, Salt Lake City—Utah Sprocket & Machinery Co., 717 So. 4th W. EL 5-8811

Wash., Aberdeen—Mill & Logging Supply Co., 313 So. H St.

Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave. CE 3111

Wash., Longview—Bearing Sales & Service, 743 Commerce Ave. HA 5-1850

Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St. LI 7-2421

Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. EL 5650

Wash., Tacoma—Washington Belting & Rubber Co., 472 E. 11th St. MA 8153

Wyo., Casper—Great Northern Tool & Supply Co., 333 W. Midwest Ave.

Wyo., Casper—Power Services, Inc., 353 So. Ash St.

DICK, R & J, CO., INC., P.O. Box 388, Passaic, N. J.

Bearings (babbitted, ball), Belting, drive (chain or link, composition), Belts (timing), Belts, V (rubber), Chains for drives (roller), Collars (shaft), Couplings (shaft), Pulleys, Shafts, Sprockets, Variable Speed transmission, Belt lacing, Pillow blocks (babbitted & bronze).

See advertisement on page 60

Branch Offices

Calif., Los Angeles—5276 Atlantic Blvd. LU 8-4014

Calif., San Francisco—510 Bryant St. SU 1-1341

Ore., Portland—716 N.E. Third Ave. BE 4-6251

Wash., Seattle—307 Maritime Bldg. MU 2-1922

Representatives

(Contact Los Angeles, San Francisco, Portland or Seattle branches for any information.)

Diehl Manufacturing Co., 1209 Finderne Ave., Somerville, N. J.

Fans, Electric Motors (fractional and integral hp.).

Branch Office
Calif., Los Angeles—808 So. Broadway. MA 2-3942

Representatives

Calif., Los Angeles—Hayjax Co., 433 Colyton St. MU 6279

Calif., San Francisco—Keeler, White Co., 615 Seventh St. HE 1-2900
Colo., Denver—Spicer-Lindsay Assoc., 2475 W. 26th Ave. GR 7-1247
Ore., Portland—Keeler, White Co., 322 N.W. 4th Ave. CA 7-0593
Wash., Seattle—Keeler, White Co., 1041 Sixth Ave. So. EL 2367

DILLON, W. C. & CO., INC., 14620 Keswick St., Van Nuys, Calif.

Dyna-Switch (prevents overloading of hoists and cranes).

DINGS MAGNETIC SEPARATOR CO., 4740 W. Electric Ave., Milwaukee 46, Wis.

Magnetic pulleys, Magnetic separators.

Representatives

Calif., Los Angeles—A. W. Nash Co., 2112 S. Atlantic Blvd. AN 9-7304

Calif., San Francisco—Samson Sales Co., 420 Market St. EX 2-7070

Ore., Portland—Joseph Taraba Co., P. O. Box 5232. BE 4-6491, 2

DODGE MANUFACTURING CORP., 500 So. Union St., Mishawaka, Ind.

Power transmission machinery (bearings, clutches, couplings, V-belt drives, chain drives, dry fluid drives, pulleys, speed reducers, sprockets, sheaves), Collars (shaft), Pillow blocks.

See advertisement on page 8

Branch Offices

Calif., Rivera—7744 So. Industry Avenue. RA 3-8621

Calif., San Francisco—55 New Montgomery. DO 2-8434

Representatives

Colo., Denver—Donald Leckey, 1483 So. Eu-dora. SK 6-5347

Ore., Oswego—Marion Studebaker, 1011 Bayberry Rd. NE 6-5081

DOERR ELECTRIC CORP., 513 No. Fourth Ave., Cedarburg, Wis.

Electric motors, Variable speed drives.

Representatives

Calif., Alhambra—Cox Sales & Engineering, 1819 W. Valley Blvd. CU 3-2351

Calif., San Leandro—Monarch Corp., 2075 Williams St. SW 8-0980

Ore., Portland—Donal Co., P.O. Box 7013. CA 6-3131

Wash., Seattle—Caskey Engineering, 2200 First Ave. So. MA 4073

DRESSER INDUSTRIES, see ROOTS-CONNERSVILLE BLOWER DIV.

DUKES CO., INC., 3999 No. 25th Ave., Schiller Park, Ill.

Hydraulic cylinders, Valves and couplers.

Representatives

Calif., Bell Gardens—Paul-Monroe Co., 6430 E. Gage Ave. LU 7-5226

Calif., San Francisco—Power-Mac Corp., 467 So. Van Ness

Colo., Denver—Landes, Zachary & Peterson, 275 Kalamath St. MA 3-6203

Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier St.

Utah, Salt Lake City—Landes, Zachary & Peterson, 1531 1/2 W. Second So. DA 3-0812

DUNHAM-BUSH, INC., see BRUNNER DIV.

DURAMETALIC CORP., Factory St., Kalamazoo, Mich.

Flexible metallic packings, mechanical seals.

Branch Office

Calif., Los Angeles—3935 E. Olympic Blvd. AN 1-3165

Representatives

Calif., San Francisco—Pacific Coast Rubber Co., 51 Main St. EX 2-6963

Colo., Denver—Edward F. Taylor Co., 1237 Shoshone St. TA 5-1327

Ore., Portland—Misco Service, Inc., 5924 No. Lagoon Ave., Swan Island. BU 5-6696

Utah, Salt Lake City—Bullough Asbestos Supply Co., 764 W. Second So. St. Phone 5-5453

Wash., Seattle—Marine & Industrial Supply Corp., 1123 W. Hanford St. MA 4-6926

DURANT MFG. CO., 1913 N. Buffum St., Milwaukee 1, Wis.

Industrial counters, Instrument counters for digital read-out.

Representatives

Calif., Los Angeles—Hollis Jewell Co., 5422 W. Washington Blvd. WE 3-7259

Calif., San Francisco—J. A. Hale & Co., 282 Seventh St. KL 2-0353

Calif., Denver—R. B. Kunse, 1720 Wazee St. AL 5-1476

Ore., Portland—James L. Kearns Co., 6055 N. E. Glisan. BE 6-2444

DURKEE-ATWOOD CO., 215 N.E. 7th St., Minneapolis 13, Minn. V belts.

Branch Offices
Calif., Los Angeles—5738 Holmes Ave. RI 8-7795
Calif., Oakland—2201 West St. TE 2-3818

Representatives
Ariz., Phoenix—Edward D. Maltby Co., 424 W. Jefferson
Calif., Berkeley—Berkeley Industrial Supply, 1003-5 Pardee St.
Calif., Burbank—Brand Tool & Supply Co., 907 So. Victory
Calif., El Monte—Mercury Industrial Hdw. Co., 11203 E. Garvey Blvd.
Calif., Eureka—Bearing Transmission Products, 2930 Broadway
Calif., Fresno—Central Supply Co., 424 M St.
Calif., Huntington Park—Mechanical Drives Co., 5400 Pacific Blvd.
Calif., Lodi—Gundershaug Electric Co., 130 No. Sacramento St.
Calif., Los Angeles—Acme Industrial Supply Co., 6215 Avalon.
Calif., Los Angeles—B-B Supply Co., 2126 So. Atlantic Blvd.
Calif., Los Angeles—Degen Fiege, 4559 Sheila
Calif., Los Angeles—Hendrie Belting & Rubber Co., 405 Towne Ave.
Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa.
Calif., Los Angeles—J. W. Mender Chain & Gear, 6011 So. Central Ave.
Calif., Los Angeles—Utilities Supply Co., 2852 Supply Ave.
Calif., Los Angeles—Victor Belting & Rubber Co., 2316 E. 39th St.
Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LO 5-5304
Calif., Modesto—Girardi Bearing Co.
Calif., Montebello—Metropolitan Supply Co., 1153 So. Greenwood
Calif., No. Hollywood—General Industrial Tool & Supply, 12517 Sherman Way
Calif., Oakland—Bearing Engineering Co., 1019 Harrison St.
Calif., Oakland—Bearing Specialty Co., 2424 Webster St.
Calif., Oakland—Cypress Steel & Equipment Co., 1829 Cypress St.
Calif., Oakland—Otrich Co., 3664 Grand
Calif., Pasadena—Belt & Machinery Supply Co., 16 N. Marengo, Rm 200.
Calif., Rio Vista—Olivella Materials
Calif., San Bernardino—Reliable Bearing Co., 263 So. E St.
Calif., San Diego—Edward D. Maltby Co., 745 15th St.
Calif., San Francisco—Bearing Specialty Co., 128 Texas St. HE 1-4140
Calif., San Francisco—Maynard Supply, Inc., 371 Fifth St.
Calif., So. San Francisco—Adam Hill Co., 142 Utah
Calif., Stockton—Jones Bearing Co., 505 So. Wilson Way
Nev., Fallon—Motor Supply Co., P.O. Box 712
Ore., Portland—Berg-Evans Chain Co., 240 S.W. First Ave.
Wash., Seattle—Bearing Engr. & Supply Co., 2548 Airport Way
Wash., Seattle—Berg-Evans Chain Co., 616 Sixth Ave.

DYNAMATIC DIVISION, EATON MFG. CO., 3122 Fourteenth Ave., Kenosha, Wis.

Clutches (magnetic, friction), Brakes (magnetic, friction), Drives (adjustable speed), Dynamometers, Brakes (eddy-current).

Representatives
Calif., San Francisco—Monarch Corp., 55 New Montgomery. GA 1-7724
Colo., Denver—G. M. Wallace & Co., 324 Denham Bldg. AM 6-0368
Mont., Butte—G. M. Wallace & Co., P. O. Box 208. 2-8391
Ore., Portland—Donal Co., 3139 S. W. Alta-dena Ter. CH 6-3131
Utah, Salt Lake City—G. M. Wallace & Co., 2nd and Main St. EM 4-5611
Wash., Seattle—2200 First Ave. South. MA 2-4073

EASTMAN MFG. CO., 1440 N. 24th St., Manitowish, Wis.

Fittings and couplings (hydraulic), Hose (hydraulic).

Representatives
Calif., Los Angeles—Eastman Pacific Co., 5240 Alhambra Ave.
Ore., Portland—Ray Bobbs Air-Draulic, Inc., 218 S. E. 12th Ave.

EC&M DIV., SQUARE D CO., 4500 Lee Rd., Cleveland 28, Ohio.

Controls (electric, electric motor).

Branch Offices
Calif., Los Angeles—4355 Valley Blvd. CA 1-0611

Calif., San Francisco—211 Industrial St. JU 7-6126
Wash., Seattle—830 Corwin Pl. CA 1474

Representatives
Colo., Denver—H. C. Guire Co., 715 S. York St. SP 7-2864
Utah, Salt Lake City—Riter Engineering Co., Kearns Bldg. EM 3-7933

ECONOMY FUSE & MANUFACTURING CO., 2717 N. Greenview Ave., Chicago 14, Ill.

Fuses.

Branch Offices
Calif., Los Angeles—5100 Ambrose Ave. NO 4-6271
Calif., San Francisco—780 Natoma St. HE 1-4069
Ore., Portland—P.O. Box 766. AT 4-6234
Utah, Salt Lake City—1481 So. Main St. Phone 84-1133
Wash., Edmonds—9810 238th S.W. PL 9908

ELECTRA MOTORS, INC., 1110 N. Lemon, Anaheim, Calif.

Electric motors, Electric gearmotors, Speed reducers.

Branch Office
Calif., Anaheim—1110 N. Lemon. KE 5-6061

Representatives
Calif., Los Angeles—Bay City Bearing Co., 709 W. 16th St. HE 2-5485
Calif., Los Angeles—Hill Electric Co., 580 Mateo St. MU 5111
Calif., San Francisco—McCarthy Hood Assoc., 1485 Bayshore. JU 6-1860
Ore., Portland—Jos. F. Taraba Co., 1824 S.E. 50th Ave. BE 4-6491
Wash., Seattle—Jos. F. Taraba Co., 1016 First Ave. S. EL 5006

ELECTRIC MACHINERY MFG. CO., 800 Central Ave., Minneapolis 13, Minn.

Electric power apparatus (a-c. motors, induction and synchronous), A-c. generators (engine driven, steam turbine driven, waterwheel driven), Motor-generator sets (power frequencies, high frequency), Motor control, Generator switchgear, Generator voltage regulators, Adjustable speed magnetic drives.

Branch Offices
Ariz., Phoenix—P. O. Drawer 869. AL 4-8471
Calif., Los Angeles—P. O. Box 58213. LU 3-1781
Calif., San Francisco—420 Market St. EX 2-8296
Colo., Denver—1644 Blake St. AC 2-3515
Mont., Butte—829 Maryland Ave. Phone 2-5447
Ore., Portland—1233 N. W. 12th Ave. CA 3-7349
Utah, Salt Lake City—550 W. Seventh St. ST. EL 5-5378
Wash., Seattle—2603 Western Ave. MU 4950
Wash., Spokane—E. 706 Sprague Ave. TE 8-8276

ELECTRIC STORAGE BATTERY CO., see EXIDE INDUSTRIAL DIV.

ELECTRIC STORAGE BATTERY CO., THE, 40 So. 15th St., Philadelphia 2, Pa.

Exide-ironclad, Exide-Manchex, and Exide-Tytex batteries, Exide lightguards, Emergency lighting systems.

Branch Offices
Ariz., Phoenix—Room 204, 916 W. Adams St. AL 4-0851
Calif., Los Angeles—1043 So. Grand Ave. RI 9-4436
Calif., San Francisco—6150 Third St. MI 7-3100
Colo., Denver—234 Commonwealth Bldg. MA 3-7793
Ore., Portland—224 S. W. Morrison St. CA 2-3778
Wash., Seattle—500 Wall St. MA 3-1377
Wash., Spokane—617 Paulsen Bldg. MA 4-1295

ELECTRIX TERMINALS & CONNECTORS, INC., 990 E. 6th St., Cleveland 3, Ohio

Solderless terminals, Lugs, Connectors.

Representatives
Calif., Los Angeles—Control Switches, Inc., 6214 W. Manchester Blvd. OR 8-6852
Calif., San Francisco—Featherstone & Salisbury Co., 1355 Market St. KL 2-2311
Ore., Portland—Pacific Electric Sales Co., 140 S.E. 28th Ave. BE 5-4137

ELECTRO-MECHANO CO., 261 E. Erie St., Milwaukee 2, Wis.

Electric tachometers, Air hydraulic cylinders.

Representatives
Calif., Los Angeles—Instrument Laboratory, 1836 W. Florence Ave. (tachometers)
Calif., Los Angeles—Marshall Tool & Supply Co., 2850 E. Olympic Blvd.

ELECTRO-NITE CARBON CO., 8601 Torresdale Ave., Philadelphia 36, Pa.

Bearings, Pillow blocks, Shaaves.

Representatives
Calif., Los Angeles—Bay Engine Prod. Co., 2417 E. 57th St. LU 8-2011
Colo., Wheat Ridge—Darling Co., P.O. Box 277. HA 4-0443

ELECTRO PRODUCTS LABORATORIES, INC., 4501 No. Ravenswood Ave., Chicago 40, Ill.

Transducers for automatic control and counting, Rectifiers (low-voltage, d-c. power supplies).

Representatives
Power Supplies
Calif., Los Angeles—E. V. Roberts & Associates, 5068 W. Washington Blvd. WE 8-2541
Transducers
Calif., Los Angeles—King Engineering Co., 3931 Prospect Ave. NO 1-0142

ELECTRO SNAP SWITCH & MANUFACTURING CO., 4218 W. Lake St., Chicago 24, Ill.

Switches (electric).

Representatives
Ariz., Phoenix—E. F. Howe, 4328 N. 42nd Pl. AM 5-9185
Ariz., Tucson—Standard Radio Parts, 218 N. First St.
Ariz., Tucson—Tucson Electrical Supply, 523 E. Tenth St.
Calif., Encino—G. W. Ledbetter Co., 16618 Ventura Blvd. ST 9-5115
Calif., Los Angeles—H. G. Rising, 151 No. Vermont. DU 5-5311
Colo., Denver—Consolidated Parts, Inc., 1075 Galopaga St.
Colo., Denver—Ray E. Vinson, P.O. Box 8363, University Park Sta. SU 9-2851
Colo., Denver—H. G. Rising, National Parts Dist.

Ore., Portland—J. M. O'Brien Co., 7008 N. Interstate. BU 5-4444
Wash., Seattle—G. E. Harris & Co., 444 Dexter Horton Bank Bldg. MA 4-1673

ELLIOTT MFG. CO., 350 State St., Binghamton, N. Y.

Flexible shafting for power transmission.

Representative
Calif., San Francisco—Milligan-Spika Co., 1485 Bayshore. JU 5-8153

ENTERPRISE ENGINE & MACHINERY CO., 18th & Florida Sts., San Francisco 10, Calif. MI 7-0862

Engines (diesel, dual fuel, gas).

Branch Offices
Calif., Burbank—10777 Van Owen. ST 7-2611
Wash., Seattle—2534 Westlake Ave. No. AT 3-1976

ERICO PRODUCTS, INC., 2070 E. 61st Pl., Cleveland 3, Ohio.

Cadweld electrical connections (copper to copper, copper to steel, aluminum to aluminum, aluminum to copper).

Branch Office
Calif., Los Angeles—8839 Miner St. LU 1-9922

Representatives
Calif., San Francisco—Pacific Utilities Supply Co., 605 Third St. YU 6-1625
Colo., Denver—Landes, Zachary & Peterson, 275 Kalamath St. MA 3-6203
Wash., Seattle—Cascade Distributors, 1918 First Ave. So. SE 5625

EXIDE INDUSTRIAL DIV., ELECTRIC STORAGE BATTERY CO., 42 So. 15th St., Philadelphia 2, Pa.

Exide-ironclad, Exide-Manchex, Exide-Tytex batteries.

Representatives
Ariz., Phoenix—Room 204, 916 W. Adams St. AL 4-0851
Calif., Los Angeles—1043 S. Grand Ave. RI 9-4436
Calif., San Francisco—6150 Third St. MI 7-3100
Colo., Denver—234 Commonwealth Bldg. MA 3-7793
Utah, Salt Lake City—P. O. Box 133, Murray Branch. EL 9-5766
Wash., Seattle—500 Wall St. MA 3-1377

EXTREMULTUS, INC., 405 Lexington Ave., New York 17, N. Y.

Flat power transmission belting.

Branch
Calif., Monterey—117 Pearl St. FR 5-2164

Representatives
Calif., Los Angeles—Western Belting, 3525 Emery. AN 1-7117
Calif., San Leandro—Monarch Supply Co., 2075 Williams St. SW 8-0980

FAFNIR—FORT WORTH STEEL

Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AM 6-2292
Ore., Portland—Breeze Supply, 237 S.W. Front. CA 7-5447
Wash., Seattle—Washington Belting, 2763 First Ave. So. MA 3-5650
Wash., Spokane—Bitco, Inc., E. 4115 Trent Ave. KE 5-1611

FAFNIR BEARING CO., THE, 37
Booth St., New Britain, Conn.
Bearings (ball).

Branch Offices
Calif., Los Angeles—2276 E. 16th. LU 1-6171
Calif., Millbrae—20 Rollins Rd. OX 7-1244
Colo., Denver—1425 Vine St. AL 5-1495
Ore., Portland—1202 N.W. 17th Ave. CA 7-0147
Wash., Seattle—605 Spokane St. MA 4141

FAIRBANKS, MORSE & CO., 600 So.
Michigan Ave., Chicago 5, Ill.

Engines (gas, diesel), Gearmotors, Generators (electric, gasoline, diesel), Motors (electric, DC, electric, poly-phase and single-phase AC, variable speed), Pumps (turbine, centrifugal).

Branch Offices
Calif., Fresno—2379 So. G St. AM 6-8644
Calif., Los Angeles—4035 So. Soto St. LU 7-8151
Calif., San Francisco—630 Third St. EX 2-5855
Colo., Denver—4995 Colorado Blvd. FR 7-8845
Ore., Portland—105 S.E. Taylor St. BE 2-0131
Utah, Salt Lake City—153 W. 2nd South St. EM 3-2108
Wash., Seattle—668 Lane St. MU 3450

FALK CORP., THE, 3081 W. Canal
St., Milwaukee 1, Wis.

Motoreducers, Shaft mounted drives, Speed reducers, Couplings (shaft, flexible), High speed drives, Special gear drives, Single helical and herringbone gears, Marine propulsion drives, Castings (steel), Weldments, Flange mounted drives.

See advertisement on page 57

Branch Offices
Calif., Los Angeles—1068 So. Vail Ave. RA 3-8466
Colo., Denver—655 Broadway Bldg. AC 2-4707

Representatives
Calif., San Francisco—Transmission Engineering Co., 427 Bryant St.
Ore., Portland—Western Machinery Corp., 1035 S.E. 9th Ave. BE 6-4117
Wash., Seattle—A. T. Harris Co., 1500 Westlake No. AL 8460

FEDERAL PACIFIC ELECTRIC CO., 50
Paris St., Newark 1, N. J.

Electrical switchgear, Circuit breakers, Unit substations, Transformers, Motor control, Instruments, Relays, Bus duct, Panel and switchboards, Bus fittings, Power connectors.

Branch Office
Calif., Los Angeles—3333 San Fernando Rd. CL 7-8261
Calif., San Francisco—5815 Third St. AT 2-0810
Ore., Oswego—338 N. State St. NE 6-4573
Wash., Seattle—1415 Elliott Ave. W. AL 3-7801
Wash., Spokane—W. 1207 College Ave. FA 7-8571

Representatives
Ariz., Phoenix—Randy Forsyth, P.O. Box 3676, AL 3-0927
Ida., Boise—M. Swendsen, P.O. Box 156, Phone 4-4971
N. Mex., Albuquerque—F. W. Gorman, Inc. 1330 N. 12th St. CH 7-1596
Utah, Salt Lake City—James D. Stephens Co., 409 Continental Bank Bldg. EL 5-3540

FEEDRAIL CORP., 125 Barclay St.,
New York 7, N. Y.

Trolley busway electrification systems for industry.

Representatives
Calif., Los Angeles—Allied Industries, 412 Seaton St. MA 8-2244
Wash., Seattle—E. A. Will, 534 First Ave. So. MA 3-2716

FENWAL, INC., Pleasant St., Ash-
land, Mass.

Temperature controls of all types.

Branch Office
Calif., Los Angeles—1111 So. Burlington Ave. DU 8-3168
Representatives
Calif., San Francisco—Belilove Co., 420 Market St. TR 5-7244
Colo., Denver—E & M Equipment Co., 2415 15th St. GL 5-3651
Ore., Portland—Wiant Products Co., 1231 N.W. Hoyt St. CA 7-2671
Wash., Seattle—J. C. McDougall Co., 520 First Ave. So. MA 7667

FIRCO, INC., see REMCO MFG. CO.,
a div.

FISCHER & PORTER CO., 580 War-
minster Rd., Hatboro, Pa.
Controls (compressed air, electric, electric motor, hydraulic), Regulators (pressure).

Branch Offices
Calif., Anaheim—130 E. Orangethorpe Way, LA 6-7741
Calif., Oakland—5010 Woodminster Lane, AN 1-8794
Colo., Denver—1737 Franklin St. TA 5-6748
Wash., Seattle—1000 4th Ave. So. MU 2-4442

Representatives
Ariz., Tucson—Clyde F. Lewis, 2323 Aviation Hwy. TU 3-2493
Ore., Portland—Martig's, Inc., 5741 N.E. Glisan St. BE 2-1949
Utah, Salt Lake City—Wayne Wiscomb Co., Sugarhouse Sta., Box 19.

FISHER GOVERNOR CO., Marshall-
town, Ia.

Regulators (pressure).

Representatives
Ariz., Phoenix—Cone & Wallace Co., 1325 So. 26th St. BR 5-4496
Calif., Los Angeles—B. R. Jones & Co., 2334 E. 8th St. TR 1867
Calif., San Francisco—George R. Friederich & Co., 725 Tehama St. MA 1-3437
Colo., Denver—Joy & Cox, Inc., 2124 Broadway. AM 6-0323
Ore., Portland—R. H. Brown & Co., 5825 N.W. Front Ave. CA 7-1155
Utah, Salt Lake City—Williams, Gritton & Wilde, 204 Dooly Bldg. Phone 4-6421
Wash., Seattle—Power & Controls, Inc., 5505 17th Ave. N.W. HE 3819

FLATON MACHINE WORKS, INC.,
7829 So. Broadway, St. Louis 11, Mo.

Automatic safety clutches.

Representatives
Calif., Los Angeles—Davis Material Handling Co., 4801 Huntington Dr. N. CA 2-7197
Calif., Oakland—Edward L. Parsons Co., 600 16th St.
Colo., Denver—Spicer-Lindsay Associates, 2475 W. 26th Ave.
Ore., Portland—Berg Evans Chain Co., 240 S. W. First Ave.
Mont., Butte—Ed Smith Sales Co., P. O. Box 172
Wash., Seattle—Berg Evans Trans. Co., 616 Sixth Ave. So.

FLEXIBLE STEEL LACING CO., 4607
Lexington St., Chicago 44, Ill.

Belt fasteners for flat transmission, V and conveyor belting.

See advertisement on page 115

Branch Office
Calif., San Mateo—James E. McComb, 10 Jody Ct. FI 5-8057

FLICK-REEDY CORP., see MILLER
FLUID POWER DIV.

FLEXONICS CORP., 1315 So. Third
Ave., Maywood, Ill.

Pipeline guides and anchors, Expansion joints, Expansion compensators.

Branch Offices
Calif., San Francisco—1485 Bayshore Blvd. DE 3-0573
Calif., Santa Ana—3224 W. Delhi Rd. KI 5-8261

Representatives
Ariz., Phoenix—Barrett Haentjens Sales, 4344 E. Indian School Rd. CR 4-4271
Calif., Long Beach—Barnes & Delaney, 2600 Atlantic Ave. NE 6-1785
Calif., Los Angeles—Bushnell Controls & Equipment Co., 5137 W. Jefferson Blvd. WE 6-2149
Calif., Los Angeles—Richard S. Dawson Co., 333 Glendale Blvd.
Calif., Los Angeles—F. D. Delafield Co., 2109 So. San Pedro
Calif., Los Angeles—L. A. Flexible Metal Hose, 124 E. Third Ave. MU 2211
Calif., Sacramento—Sacramento Rubber Co., 723 J St.
Calif., San Francisco—Industrial Hose Supply, 154 Eighth St. HE 1-7417
Calif., San Francisco—Milmac, 280 Seventh St.
Calif., San Francisco—Transmission Eng. Co., 427 Bryant St. SU 1-4738
Ida., Boise—Richardson Equipment Co., 612 Front St. Phone 3-9431
Ore., Portland—Alaskan Copper & Brass, P.O. Box 2229, BE 6-2121
Ore., Portland—E. S. Constant Co., 1814 S.E. Seventh Ave. BE 4-9774
Utah, Salt Lake City—Capitol City Steel Co., 324 W. 8th So. DA 2-3533

Wash., Seattle—Alaskan Copper & Brass, P.O. Box 3265, EL 5800
Wash., Seattle—Pacific Fishing & Trading Co., 4420 14th St. N.W.

FOOTE BROS. GEAR & MACHINE
CORP., 4545 So. Western Blvd., Chi-
cago 9, Ill.

Gears, Speed reducers, Power transmission equipment.

Branch Office
Calif., South Gate—3529 Firestone Blvd. LO 7-5891

Representatives
Ariz., Phoenix—Edward D. Maltby, Inc., 424 W. Jefferson
Calif., Anaheim—Edward D. Maltby Co., Inc., 1520 W. Lincoln
Calif., Fresno—Commercial Mfg. & Supply Co., 2570 Railroad Ave. AD 7-6101
Calif., Huntington Park—Mechanical Drives Co., 5400 Pacific Blvd. LU 3-4909
Calif., Long Beach—Edward D. Maltby, Inc., 2041 Anaheim Rd.
Calif., Los Angeles—Edward D. Maltby, Inc., 1940 S. Figueroa St. RI 7-9191
Calif., Redding—Redding Industrial Electric Co., 3990 Highway 99 S.
Calif., San Diego—Edward D. Maltby, Inc., 745 15th St.
Calif., San Francisco—Chas. A. Fowler Co., 979 Bryant St.
Calif., San Francisco—Western Machinery Co., 650 Fifth St. EX 7-1717
Calif., Santa Clara—Whitney Industrial Drives, 2311 Lafayette St. CH 3-4664
Calif., Stockton—Stockton Iron Works, P.O. Box 1331, HO 6-7091, HO 3-0216
Colo., Cripple Creek—Union Supply Co.
Colo., Denver—Union Supply Co., 5160 Colorado Blvd.
N. Mex., Carlsbad—Carlsbad Supply Co., 501 Park Dr.
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271
Wyo., Casper—Union Supply Co., 208 N. Market.

FORMSPRAG CO., 23601 Hoover
Rd., Van Dyke, Mich.

Clutches for overrunning, indexing and backstop applications.

Branch Office
Calif., Los Angeles—425 So. Western Ave. DU 2-0500

Distributors
Ariz., Phoenix—Semon Bearing & Supply Co., 325 No. Third Ave. AL 8-7566
Calif., El Centro—Winn Supply Co., 354 E. Main St. EL 2-6460
Calif., Long Beach—Bay City Bearing Co., 709 W. 16th St. HE 2-5485
Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St. RI 7-0161
Calif., Maywood—Bay City Bearing Co., 5275 Atlantic Blvd. LU 3-6041
Calif., Oakland—Bay City Iron Works, 4th & Washington Sts. HI 4-1092
Calif., San Diego—Winn Supply Co., 256 Seventh Ave. BE 3-3106
Ore., Portland—Western Machinery Corp., 1035 S.E. 9th Ave. EM 4117
Wash., Aberdeen—Mill & Logging Supply Co., 318 So. H St.
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. EL 5650

FORT WAYNE DIV., WEATHERHEAD
CO., 128 W. Washington Blvd.,
Fort Wayne, Ind.

Automotive and industrial fittings, Hydraulic hose and fittings, Ernesto flareless couplings, Reusable hose ends, Clamp type hose ends, Swaged hose assemblies, Drain and shut-off cocks, Dash controls, Tube working tools, Barb-tite push-on hose ends.

Branch Offices
Calif., Glendale—1736 Standard Ave. CH 5-1891
Calif., Martinez—216 Carlos Dr. MU 5-1839
Calif., Woodland Hills—21237 Lopez St. DI 7-2681
Wash., Bellevue—2521 - 157th Ave. S. E. PO 0916

Representatives
Calif., Huntington Park—California Couplings Co., 3081 E. Slauson Ave.
Calif., Los Angeles—Republic Supply Co., 2600 S. Eastland Ave.
Calif., San Francisco—Adam-Hill Co., 244 Ninth St.
Calif., San Marino—Jay H. Collin Co., 2491 Mission St.
Ore., Portland—Goodyear Rubber & Asbestos Co., 205 N. W. Fifth Ave.
Ore., Portland—Hydraulic & Air Equipment Co., 2316 N. W. Savier St.
Wash., Seattle—Tubesupply, 2931 E. Marginal
Wash., Spokane—Calkins Mfg. Co., 1102 Atlantic St.

FORT WORTH STEEL & MACHINERY
CO., 3600 McCart St., Fort Worth 1,
Tex.

Drives (roller chain, V-belt), Sheaves, Sprockets.

Branch Offices

Calif., Los Angeles—3026 E. Olympic Blvd. AN 3-6128
Calif., San Francisco—307 Corey Way. JU 9-2585
Colo., Denver—4975 Jackson St. FL 5-2294

Representatives

Calif., Fresno—Geo. M. Philpott Co., 2376 Railroad Ave.
Calif., Huntington Park—Mechanical Drives, 2610 E. 54th St.
Calif., Long Beach—Power Pumps, 2480 E. Cherry Ave.
Calif., Los Angeles—Bearing Specialty Co., 225 W. 27th St.
Calif., San Francisco—Adam Hill Co., 244 Ninth St.
Calif., Stockton—Girardi Bearing, 118 E. Stockton St.
Colo., Denver—Power Transmission, 2970 Jackson St.
Colo., Grand Junction—Bearings & Power Transmission, 761 So. Seventh St.
N. Mex., Farmington—Justis Supply Co., 821 E. Main
Ore., Portland—Power Transmission, 1107 N.W. 14th Ave.
Wyo., Casper—Industrial Supply Div., Wyoming Automotive

FOXBORO CO., THE, Foxboro, Mass. Industrial instruments for the measurement and control of process variables such as conductivity, pressure, flow, temperature and dew point.

Branch Offices

Calif., Alhambra—1212 So. Garfield AT 1-0934, CU 3-6875
Calif., San Leandro—399 Preda St. LO 2-5525
Colo., Denver—2829 E. Second Ave. DE 3-4297

Representatives

Ore., Portland—Bumstead-Woolford, 320 S.W. Stark St. CA 8-6686
Utah, Salt Lake City—Conely Engineering Co., 165 So. 1st W. St. EM 3-5013
Wash., Seattle—Bumstead-Woolford, 1411 Fourth Ave. EL 4915

FRANKLIN ELECTRIC CO., INC., 400 E. Spring St., Bluffton, Ind.

Electric motors (fractional, submersible, submatic, Inst-O-Verse, Uniseal, workshop).

Branch Office

Calif., Los Angeles—8255 Beverly. WE 3-7591

FULLER CO., 124 Bridge St., Cata-sauqua, Pa.

Rotary compressors, Vacuum pumps, Electric control panels, Pneumatic conveying systems for fly ash handling.

Branch Offices

Calif., Los Angeles—5225 Wilshire Blvd. WE 3-7126
Calif., San Francisco—564 Market St. YU 6-5486
Wash., Seattle—120 Sixth Ave. No. MU 2-3131

Representatives

Ariz., Tucson—Central Station Equipment Co., 2323 Aviation Highway. Phone 3-2493
Colo., Denver—Landes, Zachary & Peterson Co., 275 Kalamath St. MA 3-6203
Ore., Medford—Cal-Ore Mach. Co., 1105 Court St. Phone 3-4507
Ore., Portland—Roy K. Farris, 4131 N.E. Stanton. AT 2-9755

FULTON SYLPHON DIV., ROBERT-SHAW-FULTON CONTROLS CO., P. O. Box 400, Knoxville 1, Tenn. Ph. 4-1641

Controls (temperature, pressure), Regulators (temperature, pressure), Packless valves, Expansion joints, Automatic radiator valves, Metal bellows and assemblies, Automobile thermostats.

Branch Office

Calif., Los Angeles—3101 Imperial Highway. NE 6-9791

Representatives

Ariz., Phoenix—Carns-Hoaglund Co., 420 N. 15th Ave. AL 8-2793
Calif., San Francisco—Norman Brown Co., 766 Minna St., UN 1-0144
Ore., Portland—Bert Farnes Co., 317 Bldrs. Exchange Bldg. CA 7-1766
Utah, Salt Lake City—Midgley-Huber Co., 44 W. Eighth St. St. Phone 22-2537
Wash., Seattle—Heating Service Co., 314 Ninth Ave. No. MA 8660
Wash., Spokane—Frederick Co., P.O. Box 2152. BR 1444

FURNAS ELECTRIC CO., 1043 McKee St., Batavia, Ill.

Controls (electric motor)—magnetic starters, drum controllers, pressure switches, and pilot devices.

Representatives

Ariz., Phoenix—Southwest Sales Co., 1620 E. Earle Dr. CR 4-1331
Calif., Los Angeles—Ed Warburg Co., 1207 E. 8th St. TR 2981
Calif., San Francisco—John F. Cady Co., Sales Mart Bldg. JU 5-4108

Colo., Denver—Clyde P. Elliott, 661 Delaware St. AL 5-7988

Ore., Portland—Donal Co., P.O. Box 7013. CA 2-4343

Utah, Salt Lake City—J. Henry Jones Co., 120 Apricot Ave. Phone 5-4191

Wash., Seattle—Muth-Richards Co., 1804 Bush Pl. CA 2128

Distributors

Ariz., Phoenix—Daley Electric Co., 1825 E. Jefferson
Ariz., Phoenix—Hanson's Supply, 2310 W. McDowell
Ariz., Phoenix—Salt River Pump & Supply Co., 2846 Grand Ave.
Ariz., Phoenix—State Equipment & Supply, 416 So. 7th Ave.
Calif., Burbank—Coast Wholesale Electric Co., 2600 W. Magnolia
Calif., Fresno—Arrow Electric Co., 645 Broadway St.
Calif., Fresno—Snider Electric Co., 2377 So. G St.

Calif., Inglewood—Inglewood Wholesale Co., 923 Prairie Ave.

Calif., Los Angeles—Burke Engineering Co., 1204 W. Washington

Calif., Los Angeles—Main Electric Supply Co., 6700 So. Main St.

Calif., Los Angeles—Marshall Tool & Supply Co., 2850 E. Olympic

Calif., No. Hollywood—Cal-State Electric Co., 10711 Chandler Blvd.

Calif., No. Hollywood—Dyer's Electric Supply Co., 7350 Varna Ave.

Calif., Redding—Moty & Van Dyke, Inc., Highway 99 So.

Calif., Richmond—Pioneer Electric Co., 929 Chanslor Ave.

Calif., Sacramento—Shasta Distributors, 2001 Fulton Ave.

Calif., Sacramento—Superior Sales Co., 1725 19th St.

Calif., San Diego—California Electric Works, 424 8th St.

Calif., San Diego—Southwest Supply Co., 510 Eighth Ave.

Calif., San Francisco—Frazar & Hansen, Ltd., 301 Clay St.

Calif., San Francisco—Herning Co., 1178 Folsom St.

Calif., San Francisco—Nadon Engr. & Sales Co., 7 Front St.

Calif., San Francisco—Refrigerator & Power Specialties, 380 Brannan St.

Calif., San Francisco—Star Delta Electric Works, 50 Shipley

Calif., San Jose—San Jose Armature & Motor, 1002 So. 2nd St.

Calif., Stockton—Refrigerator & Power Specialties, 1258 No. Union St.

Colo., Denver—Consolidated Parts Distributors, 1075 Galapago St.

Colo., Denver—Hendrie & Bolthoff Co., 1635 17th St.

Colo., Denver—Union Supply Co., 5460 Colorado Blvd.

Nev., Las Vegas—Hank Electric Motor Service, 13 W. Charleston

N. Mex., Eunice—Gary Electric, P. O. Box 111

Ore., Milton-Freewater—Widner Electric Co., 12 N.W. Fifth Ave.

Ore., Portland—Platt Electric Supply, 1305 N.W. Davis St.

Utah, Salt Lake City—Stuart Electric Co., 13 Kensington Ave.

Wash., Seattle—Palmer Electric Co., 307 Westlake Ave.

Wash., Seattle—Star Machinery Co., 241 Lander St.

Wash., Spokane—Star Machinery Co., 415 E. Sprague Ave.

Wash., Tacoma—Center Electric Engrg. Corp., 1501 Center St.

Wash., Tacoma—Crescent Electric Co., 920 Center St.

Wash., Walla Walla—Ault Irrigation Equipment, 1020 W. Pine St.

Wash., Yakima—Cooper Electric Motor Service Co., 205 So. Fourth Ave.

G & W ELECTRIC SPECIALTY CO., 3500 W. 127th St., Blue Island, Ill.

High voltage cable devices, Potheads, Cable boxes, Oil fuse cutouts, Oil switches, Switchgear, Splicing kits, insulating compound, Joints.

Representatives

Calif., Los Angeles—R. E. Cunningham & Son, 530 W. Sixth St. MA 8-1105
Calif., San Francisco—C. E. Ingalls & Sons, Monadnock Bldg. GA 1-2916
Colo., Denver—H. C. Guire & Co., 715 S. York St. SP 7-2864
N. Mex., Albuquerque—Frank W. Gorman, c/o John Ridenbaugh, P. O. Box 743. CH 7-1596
Utah, Salt Lake City—Riter Engineering Co., Kearns Bldg. EM 3-7933
Wash., Seattle—W. R. Hendrey Co., Smith Tower Bldg. GR 3968

GALLAND-HENNING NOPAK DIV., 2753 South 31st St., Milwaukee 46, Wis.

Cylinders (air and hydraulic, single and double acting), Control valves (air and hydraulic, 3 and 4 way; hand, foot, cam and solenoid operated), Special fluid power devices.

Representatives

Calif., Los Angeles—Willard Engineering Co., 2709 So. Hill St. RI 7-0538
Calif., San Francisco—Transmission Engineering Co., 427 Bryant St. SU 1-4738
Colo., Denver—E. C. Wild Co., 1163 So. Cherokee St. SH 4-1253
Hawaii, Honolulu—Chapson Brothers, Ltd., 755 Sheridan St. Phone 9-2274
Ida., Lewiston—Jameson Machine Supply Co. Phone 3-4517
Mont., Missoula—Miller Machinery Co., Highway 93 So. P.O. Box 1496. Phone 9-2309
Ore., Medford—Cal-Ore Machinery Co., 1105 Court St. Phone 2-6155
Ore., Portland—Caldwell Machinery Co., 738 N.W. Glisan St. CA 3-3568
Wash., Seattle—E. C. Griffin Co., 539 1st Ave. So. EL 4216
Wash., Spokane—Western Machinery Co., No. 808 Division St. FA 7-1501

GARDNER-DENVER, Front St., Quincy, Ill.

Air compressors (portable, stationary), Motors (air), Pumps (hydraulic power), Air tools.

Branch Offices

Calif., Los Angeles—7654 E. Slauson Ave. RA 3-8711
Calif., San Francisco—811 Folsom St. EX 2-8747
Colo., Denver—1727 E. 39th Ave. AC 2-9393
Ida., Wallace—407 Seventh St. Phone 1139
Mont., Butte—215 E. Park St. Phone 2-2662
Utah, Salt Lake City—113 W. Second St. ST EM 4-3202
Wash., Seattle—615 Eighth Ave. So. MA 4-1115

GATES RUBBER CO., THE, 999 So. Broadway, Denver 17, Colo.

Belts (flat, high speed, variable speed), Belts, V (rubber), Rubber hose (air, steam, hydraulic), Pulleys, Sheaves.

Branch Offices

Calif., Los Angeles—2850 E. 46th St. LU 8-9221
Calif., San Francisco—242 Shaw Rd. PL 6-3711
Colo., Denver—999 So. Broadway. SH 4-1911
Ore., Portland—2551 N.W. 30th Ave. CA 2-9641
Wash., Seattle—5935 4th Ave. So. MO 8970

Representatives

Calif., San Diego—Winn Supply Co.
Calif., San Francisco—Darcoid Co. of Calif.
Colo., Denver—Hendrie & Bolthoff Co.
Colo., Denver—Power Transmission, Inc.
Colo., Pueblo—Bernstein Bros. Pipe & Machinery

Ida., Boise—Western Bearings, Inc.

Ore., Portland—American Industrial Products

Utah, Salt Lake City—Bearing Engineering & Sales

Wash., Seattle—Campbell Industrial Supply Co.

Wash., Spokane—Washington Machinery & Supply

Wash., Walla Walla—Morrison Supply Co.

GEAR ENGINEERING & MFG. CO., INC., 2826 Norton Ave., Lynwood, Calif. NE 8-1963

Collars (shaft), Gears (bevel, helical, spur, etc.), Gears (worm), Shafts, Splines, Sprockets.

GEDNEY ELECTRIC CO., 1270 Sixth Ave., New York 20, N. Y.

Conduits and fittings (electric).

Representatives

Calif., Los Angeles—Rutkin Electric Sales Corp., 935 Stanford Ave. TU 1224
Calif., San Francisco—Baxter Co.
Colo., Denver—Bacon Electric Equipment Ore., Portland—Sanderlin Co.
Utah, Salt Lake City—Darger Co.
Wash., Seattle—Sanderlin Co., 129 First Ave. W. MU 7777

GENERAL CABLE CORP., 420 Lexington Ave., New York 17, N. Y.
All types of electrical wire and cable.

Branch Offices

Ariz., Phoenix—3316 E. Washington St. BR 5-5401
Calif., Los Angeles—2906 Leonis Blvd. LU 2-8327
Calif., Sacramento—915 Fee Dr. WA 2-5881
Calif., San Diego—520 E St. BE 4-8538
Calif., San Francisco—185 Industrial Ave. FL 5-5323
N. Mex., Albuquerque—2100 Zearing N.W. CH 7-0547
Ore., Portland—2215 N.W. Quimby St. CA 7-5556
Utah, Salt Lake City—22 Jeremy St. DA 2-5829
Wash., Seattle—1137 W. Hanford St. MA 4271

GENERAL CONTROL—GRATON & KNIGHT

GENERAL CONTROL CO., INC., 1204 Soldiers Field Rd., Boston 34, Mass.
Control panels, switches (key, lever, foot, push-button, limit), Timers (electronic, synchronous motor).

Branch Office
Calif., Los Angeles—3757 Wilshire Blvd. DU 8-7111

Distributor
Calif., Los Angeles—Federated Purchaser, 11275 W. Olympic Blvd. BR 2-0831

GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schemectady 5, N. Y.

Complete line of electric equipment.

Branch Offices
Ariz., Phoenix—220 Luhrs Tower. AL 8-7724
Ariz., Tucson—650 No. Sixth Ave. MA 3-3113

Calif., Fresno—407 Patterson Bldg. AM 6-8302

Calif., Los Angeles—212 No. Vignes St. MA 5-7381

Calif., Los Angeles—3325 Wilshire Blvd. DU 1-3641

Calif., Oakland—409 Thirteenth St. TW 3-0266

Calif., Rialto—337 N. Riverside Ave. TR 5-6011

Calif., Sacramento—626 Forum Bldg. GI 3-1788

Calif., San Francisco—235 Montgomery St. DO 2-3740

Colo., Denver—650 Seventeenth St. KE 4-7171

Ida., Boise—1524 Idaho St. Phone 4-3021

Mont., Billings—303 No. Broadway. Phone 2-2081

Mont., Butte—103 No. Wyoming St. Phone 4306

N. Mex., Albuquerque—323 Third St., S.W. CH 3-3741

Ore., Eugene—1170 Pearl St. DI 5-7245

Ore., Medford—107 E. Main St. Phone 2-5891

Ore., Portland—2929 N.W. 29th Ave. CA 8-0281

Utah, Salt Lake City—200 So. Main St. EM 4-1891

Wash., Pasco—824 W. Lewis St. LI 7-5515

Wash., Seattle—710 Second Ave. MA 4-8300

Wash., Seattle—220 Dawson St. PA 5-6800

Wash., Spokane—So. 162 Post St. TE 8-3621

Wash., Tacoma—1216 Washington Bldg. BR 2-8361

Wash., Wenatchee—328 No. Wenatchee Ave. NO 2-2404

GENERAL ELECTRIC CO., CIRCUIT PROTECTIVE DEVICES DEPT., 41 Woodford Ave., Plainville, Conn.

Circuit breakers (molded case), switches (disconnect, open knife, safety), Panelboard component parts, Circuit breaker load centers, Fusible service entrance.

Branch Offices
Calif., Los Angeles—2450 E. 23rd St. LU 3-6722

Calif., Oakland—600 16th St. TE 2-0577

Calif., Sacramento—Builders Exchange Bldg., 1331 T St. GI 3-6960

Calif., San Francisco—1485 Bayshore Blvd. JU 4-9452

Colo., Denver—1735 York St. DU 8-4157

Ore., Portland—2929 N.W. 29th Ave. CA 8-0281

Utah, Salt Lake City—Rm. 212, 65 E. Fourth St. EM 3-9876

Wash., Seattle—5000 E. Marginal Way. MO 5-4800

Wash., Spokane—So. 162 Post St. TE 8-3621

GENERAL ELECTRIC CO., CONSTRUCTION MATERIALS DIV., 1285 Boston Ave., Bridgeport 2, Conn.

Cables (bus drop, neon sign, street lighting, railway signal, control), Wire (aircraft, appliance, fixture, machine tool, gasoline-resistant, magnetic, remote control).

Branch Offices
Calif., Los Angeles—3000 E. 46th St. LU 2-8211

Calif., San Diego—1240 7th Ave. BE 3-6461

Calif., San Francisco—870 Market St. DO 2-3740

Colo., Englewood—3385 So. Bannock St. SU 1-3707

Ore., Portland—2106 N.E. 56th St. BE 2-6639

Utah, Salt Lake City—200 So. Main St. EM 4-1891

Wash., Seattle—220 Dawson St. RA 6176

Wash., Spokane—So. 162 Post St. TE 8-3621

GENERAL ELECTRIC CO., Distribution Assemblies Dept., 41 Woodford Ave., Plainville, Conn.

Low voltage distribution and control equipment; circuit breakers; disconnect switches; safety switches; open knife switches; panelboard components; circuit breaker load centers and fusible service entrance equipment; panelboards; motor control centers; busway; switchboards and distribution center unit substations.

Branches
Calif., Oakland—600 16th St. TE 2-0577
Calif., Los Angeles—2450 East 23rd St. LU 3-6722
Calif., Sacramento—Builders Exchange Bldg., 1331 T St. GI 3-6960
Calif., San Francisco—1485 Bayshore Blvd. JU 4-9452
Ore., Portland—2929 N.W. 29th Ave. CA 8-0281
Wash., Seattle—5000 East Marginal Way. PA 5-4800
Wash., Spokane—South 162 Post St. TE 8-3621

GENERAL METALS CORP., see ADEL PRECISION PRODUCTS DIV.
GENERAL MOTORS CORP., see DELCO-REMY DIV., DETROIT DIESEL ENGINE DIV., and HYATT BEARINGS DIV.

GENERAL MOTORS CORP., Delco Products Div., 329 E. First St., Dayton 1, Ohio

Electric motors, Generators, Gearmotors.

Branches
Calif., Los Angeles—2014 E. 15th St. DU 9-1434

Calif., Oakland—1250 - 53rd St. OL 5-5731

Colo., Denver—215 Wazee Mkt. AC 2-6965

Wash., Edmonds—1149 - 6th Ave. MU 2682

GENERAL MOTORS CORP., NEW DEPARTURE DIVISION, 269 North Main St., Bristol, Conn.

Precision, standard and miniature ball bearings, steel balls, pillow blocks, upset forging and spray clutches.

Branch Offices
Ariz., Phoenix—213 First Ave. AL 3-7770

Calif., Berkeley—1716 Fourth St. LA 6-8750

Calif., Los Angeles—3650 S. Broadway. AD 3-5101

Wash., Seattle—5000 1st Ave., S. PA 3-5920

Representatives
Calif., Berkeley—United Motors Service, 1717 Fourth St.

Calif., Los Angeles—United Motors Service, 3325 Wilshire Blvd.

Colo., Denver—United Motors Service, 2151 E. 45th Ave.

Wash., Seattle—United Motors Service, 5000 1st Ave., S.

GERBING MANUFACTURING CORP., 11800 Milwaukee Ave., Northbrook, Ill.

Couplings (flexible shaft), Motor bases (adjustable), Motor drives (mechanical, variable speed), Pulleys (variable speed), Shafts (standard and counter-shaft V-groove).

Representatives
Ariz., Phoenix—Edward D. Maltby Co., 424 Jefferson St.

Calif., Fresno—Commercial Manufacturing & Supply Co., 2432 Railroad Ave.

Calif., Los Angeles—B B Supply Co., 4649 Telegraph Rd.

Calif., Los Angeles—Edward D. Maltby Co., 1940 S. Figueroa St. RI 7-9191

Calif., Los Angeles—J. W. Minder Chain & Gear Co., 6011 So. Central Ave. AD 3-7221

Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LO 5-5304

Calif., Pomona—Reliable Bearing & Supply Co., 777 E. Second St.

Calif., Riverside—Reliable Bearing & Supply Co., 3545 Main St.

Calif., San Diego—Edward D. Maltby Co., 745 Fifteenth St.

Calif., San Francisco—Monarch Corp., 55 New Montgomery St.

Calif., San Leandro—Monarch Corp., 2075 Williams St. SW 8-0980

Calif., Santa Clara—Monarch Corp., 2455 The Alameda

Calif., San Bernardino—Reliable Bearing & Supply Co., 263 So. E St.

Ida., Boise—Western Bearings, Inc., 520 Front St.

Ida., Pocatello—Western Bearings, Inc., 156 S. Third St.

Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W.

Mont., Billings—Power Transmission Equipment Co.

Ore., Portland—J. W. Minder Chain & Gear Co., 307 S.E. Hawthorne Blvd. BE 6-1131

Ore., Portland—Western Machinery Co., 1034 S.E. Ninth Ave. BE 6-4117

Utah, Salt Lake City—Bearing Engineering & Sales Co., 756 So. Second St. W.

Wash., Aberdeen—Mill & Logging Supply Co., 313 S. H St.

Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave.

Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. S.

Wash., Spokane—Bitco, Inc., E. 2920 28 Trent

Wash., Tacoma—DuCharme Industrial Transmission Co., 501 E. 24th St.
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St.
Wash., Walla Walla—Morrison Supply Co., 217-225 E. Alder St.
Wash., Yakima—Dodge Yakima Supply Co., 302 S. 1st St.

GOODALL RUBBER CO., Whitehead Rd., Trenton 4, N. J.

Belting, Hose, Packing, Plastic pipe, Protective coatings, Complete line of mechanical rubber goods.

Branch Offices
Calif., Los Angeles—2939 E. 11th. AN 3-6723

Calif., South San Francisco—221 E. Grand Ave. PL 6-5466

Colo., Denver—1033 Santa Fe. KE 4-8285

Ore., Portland—1111 N.W. 16th Ave. CA 7-1258

Utah, Salt Lake City—631 So. 2nd W. EL 5-7437

Wash., Seattle—1701 4th Ave. So. MA 8527

Wash., Spokane—Paulsen Bldg. MA 8131

B. F. GOODRICH INDUSTRIAL PRODUCTS CO., 500 South Main St., Akron 18, Ohio.

Belting, hose, miscellaneous industrial rubber products.

Branch Offices
Calif., Los Angeles—3525 S. Garfield Ave. RA 3-6692

Calif., San Francisco—1950 Army St. AT 2-9620

Colo., Denver—2500 W. Eighth Ave. TA 5-1267

Wash., Seattle—1 Hanford St. MU 4307-4308

Representatives
Ariz., Phoenix—Thunderbird Sales Corp., 2255 W. McDowell Rd. AL 4-8876

Calif., Los Angeles—Howard Supply Co., 5125 So. Santa Fe. KI 1281

Calif., Sacramento—Sacramento Rubber Co. 721 J St. GI 2-3847

Calif., San Francisco—Hercules Equipment & Rubber, 435 Brannan St. YU 6-2770

Calif., Stockton—Delta Rubber & Equipment Co., 530 No. Union St. 7-7813

Calif., Fresno—California Industrial Rubber Co., 2009 So. Van Ness.

Calif., San Bernardino—Reliable Bearing & Supply Co., 263 S. "E" St. TU 8-6565

Calif., Riverside—Reliable Bearing & Supply Co. of Riverside, 3545 Main St. OV 3-4503

Calif., Pomona—Reliable Bearing & Supply Co. of Pomona, 777 W. 2nd St. NA 9-5007

Calif., Bakersfield—Ba-Valley Industrial Supply Co., 131 First St. FA 7-5321

Colo., Denver—A. J. Philpott Co., 1816 California. AL 3-0590

Ore., Portland—General Rubber & Supply, 101 S. W. First Ave. CA 8-6565

Ore., Portland—Electric Steel Foundry Co., 2141 N. W. 25th Ave. CA 8-2141

Ore., Portland—Howard Cooper Corp., 5821 N. E. Glisan. BE 5-6601

Wash., Seattle—Nebur Supply Co., 3000 Western. MA 6292

GOODYEAR TIRE & RUBBER CO., 1144 E. Market St., Akron 16, Ohio

Belting, Hose, Molded-extruded goods, Rubber covered rolls, V-belts.

Branch Offices
Calif., Los Angeles—6666 E. Washington Blvd. RA 3-3611

Calif., San Francisco—1717 Harrison St. UN 1-3773

Colo., Denver—1207 Wazee St. CH 4-5465 -66

Ore., Portland—2720 N.W. 35th Ave. CA 6-2951

Utah, Salt Lake City—46 Fayette Ave. EM 4-4387

Representatives
Calif., Los Angeles—Republic Supply Co. of California, 2600 So. Eastland Ave. RA 3-2511

Calif., San Leandro—Republic Supply of California, 1919 Williams St. LO 3-0414

Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AL 5-2091

Ore., Portland—Breeze Supply Co., 237 S.W. Front Ave. CA 7-5447

GRAHAM TRANSMISSIONS, INC., Menomonee Falls, Wis.

Variable speed transmissions.

Representatives
Calif., Los Angeles—W. H. Del Mar Co., Inc., 3925 W. Slauson Ave. AX 3-5301

Calif., Oakland—Ben W. Brundage Co., 4390 Piedmont Ave. OL 3-2882

Colo., Denver—J. H. Dorrough Co., 7825 W. Colfax Ave. BE 7-2925

Ore., Portland—Western Machinery Corp., 1035 S.E. Ninth Ave. BE 6-4117

GRATON & KNIGHT CO., 356 Franklin St., Worcester 4, Mass.

Belting (leather, flat, round, V), Nycor (flat belt-

ing, nylon core), Belting accessories (lacing, cement, dressing, etc.), Couplings (shaft, flexible), Packings (leather, mechanical).

Branch Office
Calif., San Francisco—1219 Folsom St. MA 1-8429

Representatives
Calif., Fresno—Pacific Mill & Mine, 530 Van Ness Ave.
Calif., Sacramento—Sacramento Rubber Co., 721-23 J St.
Calif., San Francisco—Honolulu Iron Works, 215 Market St.
Ore., Portland—Harris Supply Co., 524 N.W. 14th Ave.
Wash., Spokane—Washington Machinery & Supply Co., 9 W. Cataldo Ave.

GREENE, TWEED & CO., North Wales, Pa.

Compounds (sealing), Couplings (round belt), Hammers (soft-faced), Packings (self-lubricating, molded, sheet), Wrenches (reversible).

Representatives
Ore., Portland—Howard C. Josephson, 706 N. Page St. AT 4-2105
Wash., Seattle—T. T. Watson Co., 508 Fifth Ave. So. SE 5279

Distributors
Calif., Fresno—Pacific Mill & Mine Supply Co., Inc.
Calif., Los Angeles—Warren & Bailey Co.
Calif., San Diego—Nuttall-Styris Co.
Calif., San Diego—Warren & Bailey Co.
Calif., San Francisco—H. N. Cook Belting Co.

Calif., San Pedro—C. J. Hendry Co.
Colo., Denver—M. L. Foss, Inc.
Colo., Denver—Hendrie & Bolthoff Co.
Hawaii, Honolulu—C. M. Lovsted & Co.
Ore., Portland—Harris Supply Co.
Ore., Portland—Wall-Western, Inc.
Utah, Salt Lake City—Mountain States Rubber Co., Inc.
Wash., Seattle—Steam Supply & Rubber Co.

GROVER MANUFACTURING CORP., 850 E. Valley Blvd., San Gabriel, Calif.

Air powered industrial pumps, Automotive service equipment and related items.

Representatives
Ariz., Phoenix—Norvin-Clark Equipment Co., 3010 N. 16th St. CR 7-0186
Calif., Palo Alto—Wilson Sales Co., 475 California Ave.
Calif., San Gabriel—Gresco, Inc., 848 E. Valley Blvd. AT 9-5284
Ore., Portland—Henry Kalz, 4023 No. Interstate. AT 7-0700
Wash., Seattle—Ditto Equipment Co., 6747 Empire Way. MO 9850

HAGAN CHEMICALS & CONTROLS, INC., P. O. Box 1346, Pittsburgh 30, Pa.

Controls, Instruments, Regulators.

Branch Offices
Calif., South Gate—3040 Tweedy Blvd. LO 7-2384
Calif., San Francisco—1485 Bayshore Blvd. CO, Denver—7580 W. 16th Ave. BE 7-2729 JU 7-0736
Ore., Portland—7819 S.E. Powell Blvd. PR 4-1667
Utah, Bountiful—146 W. 7000 St. AX 5-4711

HANNA ENGINEERING WORKS, 1767 Elston Ave., Chicago 22, Ill.
Cylinders (air, hydraulic), Valves (cylinder control), Pneumatic riveters.

Representatives
Ariz., Phoenix—E. D. Flournoy Co., 3825 W. Indian School Rd. AP 8-4502
Calif., Los Angeles—E. D. Sweetland Co., 5403 Sheila St. RA 3-0117
Calif., San Francisco—E. D. Sweetland Co., 151 Mission St. GA 1-2663
Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AM 6-2292
Ida., Wallace—Coeur d'Alene Hardware & Foundry Co., 612 Bank St.
N. Mex., Albuquerque—E. D. Flournoy Co., 606 Silver, S.W. CH 3-1055
Ore., Portland—Power Transmission Products Div. of Portland Iron Works, 1107 N.W. 14th St. CA 7-1271
Utah, Salt Lake City—Galigher Co., 545 W. Eighth St. ST. EL 9-8731
Wash., Aberdeen—Industrial Electric Service Co., 319 So. I St. AB 956
Wash., Seattle—E. D. Sweetland Co., 1250 First Ave. So. MA 2-1015

HANNIFIN CO., DIV. OF PARKER-HANNIFIN CORP., 501 So. Wolf Rd., Des Plaines, Ill.

Power cylinders (air, hydraulic), Air cylinder control valves, Hydraulic riveting and punching equipment (portable, stationary), Presses (pneumatic, hydraulic), Air line filters, regulators and lubricators.

Branch Office
Calif., Los Angeles—5827 W. Century Blvd. SP 6-1129

Representatives
Calif., Sherman Oaks—Castiglia Engineering Co., 14908 Ventura Blvd. ST 4-4409
Colo., Denver—Landes, Zachary & Peterson, 475 Kalamath St. MA 3-6203
Colo., Colorado Springs—Landes, Zachary & Peterson
N. Mex., Albuquerque—Landes, Zachary & Peterson, 4900 Domingo Rd. N.E. AL 6-9449
Ore., Portland—Jack Ogle & Co., 2505 S.E. 11th Ave. BE 5-4080
Utah, Salt Lake City—Landes, Zachary & Peterson, 153½ W. 2nd So. St. DA 2-0812
Wash., Seattle—Jack Ogle & Co., 105 Orcas St. PA 5-2030

Distributors
(For Crown line of air line filters, regulators and lubricators only.)
Calif., Emeryville—Rucker Co., 4700 San Pablo Ave. OL 3-5221
Calif., South Gate—Rucker Co., 4956 Firestone. LO 4-2521
Ore., Portland—Jack Ogle & Co., 2505 S.E. 11th Ave. BE 5-4080
Wash., Seattle—Jack Ogle & Co., 105 Orcas St. PA 5-2030

HANSEN MFG. CO., 4031 W. 150th St., Cleveland 35, Ohio.

Quick-connective couplings for fluid lines (air-gases, water-oil, etc.), Fittings (hose clamps, reusable, compression type).

Representatives
Calif., Glendale—Hester Paul Co., 1605 Victory Blvd. CH 5-3761
Calif., San Francisco—Burke Co., 2360 San Bruno. DE 3-5500
Colo., Denver—E. C. Wild Co., 1163 S. Cherokee. SH 4-1253
Wash., Seattle—Geo. W. Warden Co., 1305 Dexter Ave. AT 3-0622

HART REDUCTION PULLEY CO., 1116 Adams St., Waukesha, Wis.

Shaft-mounted speed reducers, single and two speed. Differential reducers, Brakes, post type.

Representatives
Calif., Los Angeles—W. H. Del Mar Co., 3925 W. Slauson Ave. AX 3-5301
Ore., Portland—McGuire Bearing Co., 222 N.W. Tenth Ave. CA 6-2678

HILL TRANSFORMER CO., INC., 1030 Washington St., San Carlos, Calif.

Control transformers, specialty transformers, distribution transformers, power transformers.

See advertisement on page 127

Representatives
Calif., Los Angeles—Maddox Sales Co., 914 E. Third St. MI 2306
Calif., San Francisco—Campbell & George Co., 1601 Cortland Ave. MI 8-1236
Colo., Denver—H. C. Guire, 715 So. York St. SP 7-2864
N. Mex., Albuquerque—Ralph B. Black, 721 Loma Vista Drive
Ore., Portland—Wm. O. Proby & Assoc., 1308 N. W. Everett. CA 8-7261
Utah, Salt Lake City—Stevens Sales Co., 1482 Major St.
Wash., Seattle—Wm. O. Proby & Assoc., P. O. Box 3744, Terminal Annex. EL 3483

HELBIG CO., 2550 No. 30th St., Milwaukee 10, Wis.

Carbon brushes, Carbon products.

Representatives
Calif., Los Angeles—F. S. Fletcher, 4150 So. Main St. AD 3-5203
Calif., San Francisco—Advance Carbon & Elec., 2505 Mariposa St. HE 1-4034
Colo., Denver—M. G. Mueller, 1646 Blake St. CH 4-4425
Ore., Portland—H. E. Perkins, 317 N.W. Broadway. CA 7-3631
Utah, Salt Lake City—J. R. Christensen, 247 E. Fifth So. EM 3-4419
Wash., Seattle—J. E. Richardson, 166 Jackson St. EL 7133

HERCULES MOTORS CORP., 101 11th St. S. E., Canton 2, Ohio.

Engines and power units (air cooled, liquid cooled, hp. from 4 to 630 in gasoline and diesel).

Branch Offices
Calif., Los Angeles—2336 S. Garfield Ave.
Calif., Los Angeles—6929 Bandini Blvd.

HEVI DUTY ELECTRIC CO., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.

Transformers.
Branch Office
Calif., Culver City—10826 Venice Blvd. VE 7-1205

Representatives
Calif., Arcadia—Roy Peck Associates, 103 N. Santa Anita Ave. RY 1-5277
Calif., San Francisco—Paul S. Everley Co., 550 Ninth St. HE 1-2295
Colo., Denver—Colorado Western Sales, 27 W. 10th Ave. CH 4-3960
Ore., Portland—Donal Co., P. O. Box 7013. CH 6-3131

GREENE, TWEED—HOWARD

Wash., Seattle—Muth-Richards Co., 1804 Bush Pl. EA 3-2128

HEWITT - ROBINS, INC., 666 Glenbrook Rd., Stamford, Conn.

Industrial hose, Vibrating conveyors, Screens, Shakers, Speed reducers, Pillow blocks, Gears, Cast iron pulleys, Flexible couplings, V-belt drives, Conveyor belting and idlers, Car pullers, Door hoists, Skip hoists, Rotary drives.

Branch Offices
Ariz., Phoenix—207-B Camelback Rd. CR 4-0245
Calif., Los Angeles—2604 S. Malt Ave. RA 3-4771

Calif., San Francisco—55 New Montgomery St. EX 2-4060
Colo., Denver—660 Bannock St. AC 2-8484
Colo., Denver—5075 Colorado Blvd. FL 5-8751

Ore., Portland—714 N. E. First Ave. BE 4-9658
Utah, Salt Lake City—458 S. Third St. E. DA 2-1144

Wash., Seattle—641 Dexter Horton Bldg. MA 2-8640

HILLIARD CORP., THE, 100 W. Fourth St., Elmira, N. Y.

Clutches.

Representatives
Ariz., Tucson—Central Station Equipment Co., 2323 Aviation Highway. Phone 3-2493
Calif., El Monte—Ledeon, Inc., Gilman Rd. at Garvey Blvd. CU 3-3163
Calif., San Francisco—Elder Co., 333 Seventh St. UN 1-5480
Colo., Denver—Andrew T. Lobel, 1700 Fifteenth St. MA 3-2221
Hawaii, Honolulu—American Factors, Ltd., P.O. Box 3230

Ore., Portland—Fred W. Carlson & Associates, 935 Northwest 12th Ave., Rm. 133. CA 8-3798
Utah, Salt Lake City—Sales Engineering Co., Inc., 526 W. 8th So. St. Phone 5-1162

Wash., Seattle—Fred W. Carlson, 1201 Dexter Ave. AT 4-4630

HOFFMAN ENGINEERING CORP., Ninth & Tyler Sts., Anoka, Minn.

Sheet metal electrical enclosures and wireways.

Branch Office
Calif., Venice—1609 Penmar Ave. EX 9-8305

Representatives
Ariz., Phoenix—Norman Vigoren
Calif., San Francisco—J. F. Cady Co., 1485 Bayshore Blvd. JU 5-4108
Colo., Denver—Everett Vonier Co., 1160 Elate

Ore., Portland—Donal Co., P. O. Box 7013. CH 6-3131

Wash., Seattle—Muth-Richards Co., 1804 Bush Pl. CA 2128

HOFFMAN SPECIALTY MFG. CORP., 1700 W. Tenth St., Indianapolis 7, Ind.

Steam vent valves, Water vent valves, Steam traps, Pressure reducing valves, Temperature regulators, Condensation pumps, Vacuum pumps, Circulators, Y strainers.

Representatives
Calif., Los Angeles—Paul Bradfield & Co., 864 So. Robertson Blvd. OL 5-9486
Calif., San Francisco—R. J. Fuite, 1070 Bryant. MA 1-7417
Colo., Denver—Edwin P. Cook Co., 1863 Wazee. KE 4-2371
Ore., Portland—Larry Harrington Co., 1899 N.W. Lovejoy St. CA 8-4324
Wash., Seattle—Larry Harrington Co., Inc., 405A E. 45th St.

HOOVER ELECTRIC CO., 2100 S. Stoner Ave., Los Angeles 25, Calif.

BR 2-3125

Controls (electric motor), Generators (electric), Motors (electric DC, AC).

HOUGHTON, E. F. & CO., 303 West Lehigh Ave., Philadelphia 33, Pa.

Leather drive belting, Hydraulic fluids, Packing, Cutting fluids, Lubricants.

Branch Offices
Calif., Los Angeles—2445 E. 26th St. LU 2-5242
Calif., San Francisco—1500 Davidson Ave. VA 4-3207

Ore., Portland—208 S.W. Stark St. CA 8-9211

Wash., Seattle—4100 E. Marginal Way. MA 7961

HOWARD INDUSTRIES, INC., 1760 State St., Racine, Wis.

Fractional horsepower motors, Gear reduction units, Portable generators.

Branch Office
Calif., Los Angeles—942 S. La Brea Ave. WE 8-2444

Representatives
Colo., Denver—A. J. Nelson Co., P. O. Box 5502
Wash., Seattle—Standard Electric Sales, 204 W. Lucile St. PA 5-9440

HUBBELL, HARVEY—JOHNSON

HUBBELL, HARVEY, INC., State St., Bridgeport 2, Conn.
Electric switches.

See advertisement on page 22

Branch Offices

Calif., Los Angeles—103 N. Santa Fe Ave. MU 7226
Calif., San Francisco—1675 Hudson Ave. MI 7-3240
Colo., Denver—1645 Wazee St. KE 6798
Ore., Portland—202 Regal Bldg. CA 8-1990
Wash., Seattle—201 Eyres Bldg. EA 5522

HYATT BEARINGS DIV., GENERAL MOTORS CORP., Newark, N. J.
Bearings (roller).

Branch Office

Calif., Oakland—436-14th St., Central Bank Bldg.

Representatives

(Sold through all United Motors Service companies, located in all major Western cities)

HYDRAULIC POWER DIV., HYDRAULIC PRESS MFG. CO., A DIV. OF KOEHRING CO., Mount Gilead, Ohio
Controls (hydraulic), Cylinders (air, hydraulic), Motors (hydraulic), Valves (hydraulic power line), Power units (hydraulic).

Representatives

Calif., Los Angeles—Hydraulic Equipment Co., 5924 E. Olympic Blvd. RA 3-1139
Calif., San Diego—Hoffer Engr. Co., 1115 F St. BE 4-6767
Calif., San Francisco—Power-Mac Corp., 467 So. Van Ness Ave. UN 1-1430
Ore., Portland—Power Transmission Products Div., Portland Iron Works, 1107 N.W. 14th Ave. CA 7-1271

HYDRO-LINE MFG. CO., 5600 Pike Rd., Rockford, Ill.
Cylinders (air, hydraulic).

Representatives

Ariz., Tucson—Central Station Equipment, 2323 Aviation Highway, MA 3-2493
Calif., Downey—S. Richard Kaiser, Box 67
Calif., San Francisco—Calpacific Equipment, 50 Hawthorne St.
Colo., Denver—Ernest Ritchie Co., 1305 S. Ivanhoe Way
Wash., Spokane—T. M. Pollard, E. 2146 Eighth Ave. FA 7-9528

I-T-E CIRCUIT BREAKER CO., 19th and Hamilton Sts., Philadelphia 30, Pa.

Air circuit breakers, Metal-enclosed bus, Metal-enclosed switchgear, Power switching equipment, Unit substations, Substation transformers, Oil circuit breakers, Panelboards, Safety switches, Distribution bus duct, Porcelain insulators, Rectifiers, Network analyzers, Low voltage current limiting fuses, Fusible entrance equipment, Meter boxes, Wire duct, Electromagnetic clutches.

Branch Offices

Calif., Los Angeles—1921 E. Seventh St. MA 2-7134
Calif., San Francisco—116 New Montgomery St. YU 2-2760, 3397
Colo., Denver—655 Broadway Bldg., Rm. 410. AM 6-1404

Representatives

Ariz., Tucson—Central Station Equipment Co., 2323 Aviation Hwy. MA 3-2493
Mont., Butte—R. E. McDonough Co., 829 Maryland Ave. Phone 2-5447
Ore., Portland—Garland Affolter Engineering, 1233 N.W. 12th Ave. CA 3-7349
Utah, Salt Lake City—Ritter Engineering Co., 136 So. Main St. EM 3-7933
Wash., Seattle—Garland Affolter Engineering, 2603 Western Ave. MU 2-4950

ILLINOIS TOOL WORKS, see LICON DIV.

IMPERIAL BRASS MFG. CO., THE, 6300 W. Howard St., Chicago 48, Ill.
Fittings and couplings (air, hydraulic), Hose (air, hydraulic), Valves (air and hydraulic power line).

Branch Offices

Calif., Los Angeles—1341 So. Hope St. RI 8-5646
Calif., San Francisco—476 Golden Gate Ave. OR 3-1247

Representatives

Ariz., Phoenix—Arizona Hardware Co., 1st & Jackson Sts.
Ariz., Phoenix—Ducommun Metals & Supply Co., 2626 E. Washington St.
Ariz., Phoenix—Garrett Supply Co., 130 W. Madison St.
Ariz., Phoenix—Geo. S. Thompson Co., Inc.
Ariz., Tucson—Arizona Hardware Co., 119 No. Stone Ave.
Calif., Bakersfield—Tay-Holbrook, Inc., 3530 Chester Ave.

Calif., Emeryville—Warren & Bailey Co., 1287 66th St.

Calif., Eureka—Tay-Holbrook, Inc., 940 Broadway

Calif., Fresno—Federal Pipe & Supply Co., Parrel & Butler Aves.

Calif., Fresno—Tay-Holbrook, Inc., 920 M St.

Calif., Long Beach—American Wholesale Hardware Co., 1500 W. Anaheim St.

Calif., Los Angeles—Allied Supply Co., P.O. Box 2376 Terminal Annex

Calif., Los Angeles—California Hardware Co., 500 E. First St.

Calif., Los Angeles—Ducommun Metals & Supply Co., 4890 So. Alameda St.

Calif., Los Angeles—Garrett Supply Co., 3844 Santa Fe

Calif., Los Angeles—Keenan Pipe & Supply Co., 2112 E. 27th St.

Calif., Los Angeles—Pacific Metals Co., Ltd., 2187 So. Garfield Ave.

Calif., Los Angeles—Republic Supply Co., 2690 E. Eastland Ave.

Calif., Los Angeles—Warren & Bailey Co., 3528 So. Garfield Ave.

Calif., National City—Ducommun Metals & Supply Co., 1300 Wilson Ave.

Calif., Oakland—American Brass & Copper Co., 1920 Union St.

Calif., Pasadena—E. D. Sweetland Co., 940 No. Fair Oaks

Calif., Sacramento—Tay-Holbrook, Inc., 1801 22nd St.

Calif., Sacramento—Thomson-Diggs Co., 1801 Second St.

Calif., Salinas—Tay-Holbrook, Inc., 101 Highway South

Calif., San Carlos—Tay-Holbrook, Inc., 605 Old County Road

Calif., San Diego—Warren & Bailey Co., 266 Seventh Ave.

Calif., San Francisco—Dallman Supply Co., 7th at Townsend

Calif., San Francisco—A. J. Glesener Co., 975 Bryant St.

Calif., San Francisco—Marshall-Newell Supply Co., Spear and Mission Sts.

Calif., San Francisco—C. W. Marwedel, 1235 Mission St.

Calif., San Francisco—Miller & Stern Supply Co., 1435 Folsom St.

Calif., San Francisco—Pacific Metals Co., Ltd., 3100 Nineteenth St.

Calif., San Francisco—E. D. Sweetland Co., 151 Mission St.

Calif., San Francisco—Tay-Holbrook, Inc., 165 Eighth St.

Calif., San Jose—San Jose Supply House, 520 First St.

Calif., San Jose—Tay-Holbrook, Inc., 695 Stockton Ave.

Calif., San Leandro—Republic Supply Co., 1919 Williams St.

Calif., Santa Rosa—Tay-Holbrook, Inc., 251 Roberts Ave.

Calif., Stockton—Tay-Holbrook, Inc., 1234 So. Aurora St.

Calif., Vernon—Amstan Supply Div., American Radiator & Standard Sanitary Co., 3259 E. 46th St.

Ida., Boise—Salt Lake Hardware Co.

Ore., Eugene—American Steel & Supply Co., 44 Seventh Ave. E.

Ore., Medford—Cardona Supply Co., 1101 No. Riverside

Ore., Portland—American Steel Warehouse Co., 425 N.E. 9th Ave.

Ore., Portland—Eagle Metals, Inc., of Oregon, 2336 No. Randolph Ave.

Ore., Portland—Harris Supply Co., 524 N.W. 14th Ave.

Ore., Portland—J. E. Hazeltine & Co., 2nd & Ash Sts.

Utah, Salt Lake City—Metals Supply Co., Inc., 131 Social Hall Ave., P.O. Box 600

Utah, Salt Lake City—Pacific Metals Co., Ltd., 261 W. 5th St.

Utah, Salt Lake City—Salt Lake Hardware Co., 105 N. Third W. St.

Wash., Seattle—Campbell Industrial Supply Co., 3433 Airport Way

Wash., Seattle—Eagle Metals Co., 4755 First Ave. So.

Wash., Seattle—Schwabacher Hardware Co., 1st Ave. and Jackson St.

Wash., Seattle—Seattle Hardware Co., 591 First Ave. So.

Wash., Spokane—Eagle Metals Co., Helena at Broadway

Wash., Spokane—Jensen-Bvrd Co., Box

IMPERIAL ELECTRIC CO., 80 Ira Ave., Akron, Ohio.

Electric motors (drip proof, totally enclosed, explosion proof, multi-speed, slip ring, d-c.), Generators (a-c., d-c., MG sets, frequency converters), Arbor motors (shell and shaftless), Elevator motors (traction and hydraulic).

Branch Office

Calif., Alhambra—1819 W. Valley Blvd. CU 3-2351

INGERSOLL-RAND CO., 11 Broadway, New York 4, N. Y.

Compressors, Condensers, Engines (diesel, gas),

Motors (air), Pumps, Rock drills, Tools (air, electric), Turbo-blowers.

Branch Offices

Calif., Los Angeles—5533 E. Olympic Blvd. AN 8-6761

Calif., San Francisco—350 Brannan St. GA 1-6330

Colo., Denver—1641 Blake St. KE 4-2245

Mont., Butte—845 So. Montana St. Phone 2-0451

Ore., Portland—Rm. 1004, Broadway Bldg., Broadway & Morrison Sts. CA 3-1852

Utah, Salt Lake City—144 S.W. Temple St. DA 8-8127

Wash., Seattle—526 First Ave. So. MA 2866

JEFFREY MANUFACTURING CO., 920 No. Fourth St., Columbus 16, Ohio

Bearings (babbitted), Chains for drives (detachable link, roller), Clutches, Conveyors, Couplings (shaft), Crushers, Elevators (bucket), Feeders, Hoppers (track), Pillow blocks, Pulleys, Sheaves and Sprockets.

Branch Office

Calif., Burlingame—1862 Rollins Rd. OX 7-5303

Representatives

Ariz., Phoenix—Edward D. Maltby, Inc., 424 W. Jefferson Ave.

Calif., Eureka—Bearings & Transmission Products, 2930 Broadway, HI 2-5727

Calif., Fresno—General Bearings Co., 2820 Church Ave.

Calif., Gardena—Alden Equipment Co., 1449 W. Rosecrans Ave. DA 9-6341

Calif., Long Beach—Edward D. Maltby, Inc., 2041 W. Anaheim

Calif., Los Angeles—Edward D. Maltby Co., Inc., 1718 So. Flower St. RI 7-9191

Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LO 5-5304

Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251

Calif., Sacramento—Sacramento Engineering & Machine Works, 6th & X Sts. GI 3-1313

Calif., San Diego—Edward D. Maltby, Inc., 745 Fifteenth St.

Calif., San Francisco—Adam-Hill Co., Utah Ave. & Corey Way

Calif., San Francisco—Bearing Engineering Co., 1547 Mission St. HE 1-1500

Calif., San Francisco—General Conveyor, Inc., 870 Market St. EX 7-0737

Calif., South Gate—Power Transmission & Equipment Co., 4501 Firestone Blvd.

Calif., Stockton—The Bearing Supply, 300 No. Wilson Way. HO 4-4858

Calif., Watsonville—Goodale Mfg. Co., 38 Menker St.

Colo., Denver—Hendrie & Bolthoff Co., 1635 Seventeenth St.

Colo., Denver—E. C. Horne Machinery Co., 1726 Champa St., Suite 315. TA 5-7015

Mont., Billings—Bearings Supply Co., Second Ave. & 12th St. Phone 9-1195

Nev., Reno—Styrus-Sutton Co., 622 So. Virginia St. Phone 2-3281

Ore., Portland—Northwest Chains & Sprockets, Inc., 31 N.W. First Ave. CA 8-3387

Utah, Salt Lake City—National Equipment Co., 101 W. Second St. Phone 3-8878

Wash., Seattle—Northwest Chains & Sprockets, Inc., 3628 E. Marginal Way. MA 9629

Wyo., Casper—Power Service Co., 355 So. Ash

JOHNS-MANVILLE CORP., 22 E. 40th St., New York 16, N. Y.

Conduits and fittings (electric), Insulations (industrial, electrical, building), Packings and friction materials, Panelboards (electric).

Branch Offices

Calif., Los Angeles—611 So. Catalina St. DU 5-0595

Calif., San Francisco—116 New Montgomery St. DO 2-4353

Calif., Oakland—430 Fortieth St. PI 5-7323

Colo., Denver—1755 Glenarm Place. KE 4-6378

Utah, Salt Lake City—109 W. 2nd So. St. EM 4-8446

Wash., Seattle—4303 Stone Way. ME 3-4300

JOHNSON CORP., 805 Wood St., Three Rivers, Mich.

Rotary pressure joints, Compressed air separators and aftercoolers, Solenoid operated valves, Tank controls, Boiler water level controls, Pressure equalizing boiler feed pump, Instant steam water heater, Electrap for lifting, pumping and vacuum service.

Representatives

Ariz., Phoenix—John Ladlow, P.O. Box 1784. BR 6-2371

Calif., Los Angeles—Guy L. Warden & Sons, 209 W. 12th St.

Calif., San Francisco—Calpacific Equipment Co., 50 Hawthorne St. GA 1-0697

Colo., Denver—Thermal Industrial Engineering Co., 1932 Cherry St. EA 2-1098

Ore., Portland—E. S. Constant Co., 1814 S. E. Seventh Ave. BE 4-9774

Utah, Salt Lake City—Pace-Turpin Co., 726 So. Third W. DA 2-5595
Wash., Seattle—Arthur Forsyth Co., 2800 15th Ave. W. AL 5717

JOHNSON GEAR & MFG. CO., LTD., 8th & Parker St., Berkeley 10, Calif.
Gears (spur, herringbone, worm, helical, straight and spiral bevel), Racks, Sprockets, Gear drives (right angle) for deep well turbine pumps and industrial use.

See advertisement on page 125

JOHNSON METAL HOSE, INC., 10 Sperry St., Waterbury 20, Conn.
Hose (air, flexible metallic).

Representatives
Calif., Burlingame—W. P. Wooldridge Co., Burlingame Ave.
Calif., Los Angeles—W. P. Wooldridge Co., 6440 Fleet St.
Wash., Spokane—Pollard & Co., W. 1835 Broadway

JOY MANUFACTURING CO., Oliver Bldg., Pittsburgh 22, Pa.

Air compressors (portable, stationary), Conveyors and conveyor idlers, Hose (hydraulic), Motors (air).

Branch Offices
Calif., Los Angeles—5426 E. Washington Blvd. RA 3-6305
Calif., San Francisco—1155 Harrison St. HE 1-2446
Colo., Denver—1626 Wazee St. KE 4-6334
Utah, Salt Lake City—998 So. Sixth W St. DA 2-0481
Wash., Seattle—2411 Western Ave. MU 2266

KAHN & CO., INC., 541 Windsor St., Hartford 1, Conn.

Compressed air dehydrators used for instrument air, etc.; Pressure measuring sections (for instrumentation).

Representatives
Calif., Los Angeles—F. Somers Peterson Co., 3000 So. Broadway. RI 9-6151
Calif., San Francisco—F. Somers Peterson Co., 1485 Bayshore Blvd. JU 6-7332

KEARNEY, JAMES R., CORP., 4236 Clayton Ave., St. Louis 10, Mo.

Cutouts (open and enclosed), Fuses, Switches (electric), Compression and solderless connectors, Hi-line tools and clamps.

Representatives
Ariz., Phoenix—Maydwell & Hartzell, Inc., 324 S. Second Ave. AL 3-9595
Calif., Los Angeles—Maydwell & Hartzell, Inc., 427 W. Fifth St. MU 7245
Calif., San Francisco—Maydwell & Hartzell, Inc., 870 Tennessee St. AT 8-6900
Colo., Boulder—Robert C. Smith, 311 - 19th St. HI 3-1795
Ore., Portland—Maydwell & Hartzell, Inc., 2318 N. W. Vaughan. CA 8-4173
Wash., Seattle—Maydwell & Hartzell, Inc., 306 Dexter Ave. SE 2368
Wash., Spokane—David A. Brooks, c/o Cater Transfer & Storage Co., 121 S. Monroe St. MA 4-4326
Utah, Salt Lake City—Conely Engineering Co., 165 S. First W. St. EM 3-5013

E. KEELER CO., 238 West St., Williamsport, Pa.

Water tube boilers and steam generators, Package steam generators up to 60,000 lb. of steam per hr.

Representatives
Calif., Los Angeles—Thermal Engineering & Equipment Co., 5469 San Fernando Rd. W. CH 5-3795
Calif., San Francisco—Bumstead-Woolford Co., 55 New Montgomery St.
Colo., Denver—Thermal Engr. Co., Box 755. EA 2-1098
Ore., Portland—Bumstead-Woolford Co., 320 S.W. Stark St. CA 8-6686
Utah, Salt Lake City—Pace-Turpin Co., 726 So. Third W. DA 2-5595
Wash., Seattle—Bumstead-Woolford Co., 1411 Fourth Ave. EL 4915

KELLOGG DIV., AMERICAN BRAKE SHOE CO., 97 Humboldt St., Rochester 9, N. Y.

Air compressors (portable, stationary).

Branch Offices
Calif., Los Angeles—1349 W. Washington Blvd. RI 9-7871
Colo., Denver—4303 Brighton Blvd. AL 5-3451

Representatives
Calif., Oakland—Shields-Harper & Co., 5107 Broadway. OL 3-9119
Colo., Denver—Eaton Metal Products, 4800 York St.
Mont., Havre—Motor Parts Warehouse, W. First St.

KINGWELL BROS., LTD., 457 Minna St., San Francisco 3, Calif.

Bearings (sleeve).

Branch Office
Calif., Huntington Park—2618 E. 53rd St. LU 2-7427

Representatives
Calif., Los Angeles—Almquist Bros., 2300 E. 49th St. LU 8-9111
Calif., San Francisco—Allan P. James Co., 439 Ninth St. MA 1-5934
Colo., Denver—Union Bearing & Transmission Co., 1622 Wazee St. CH 4-6061
Ore., Portland—Davis Industrial Products, 338 N.W. Sixth Ave. AT 6211
Utah, Salt Lake City—Metals Supply Co., Inc., 131 Social Hall Ave. EM 3-6727
Wash., Seattle—Industrial Products Co., 2911 First Ave. So. MA 7488

KOEHRING CO., see **HYDRAULIC PRESS MFG. CO.**

KUHLMAN ELECTRIC CO., P.O. Box 288, Birmingham, Mich.

Transformers (distribution, power, instrument, dry-type, load center, specialty).

Branch Offices
Calif., Salinas—1056 Pellett Ave. HA 4-3936 (West Coast Plant)
Calif., San Francisco—870 Tennessee St. AT 8-6900

Representatives
Ariz., Phoenix—Maydwell & Hartzell Sales & Engrg., Inc., 324 So. Second Ave. AL 3-9595
Calif., Los Angeles—Maydwell & Hartzell, Inc., 427 W. Fifth St. MU 7245
Calif., San Francisco—Maydwell & Hartzell, Inc., 870 Tennessee St. AT 8-6900
Colo., Denver—Sales Engineers Co., 211-212 Wazee Market. AC 2-4893
Ore., Portland—Maydwell & Hartzell, Inc., 2318 N.W. Vaughan. CA 8-4173
Utah, Salt Lake City—Sales Engineers Co., 2269 McClelland. DA 4198
Wash., Seattle—Maydwell & Hartzell, Inc., 306 Dexter Ave. SE 2368
Wash., Spokane—David A. Brooks, c/o Cater Transfer & Storage Co., 121 So. Monroe St. MA 4-4326

KURZ & ROOT CO., 232 E. North Island Ave., Appleton, Wis.

Generators (a-c, d-c), Motor generator sets, Motors (a-c, d-c).

Branch Office
Calif., Los Angeles—1500 E. Fourth St. AN 3-8873

Representative
Ore., Portland—Harlan C. McKay Co., 1901 N.W. 26th Ave. CA 7-5565

LADISH CO., 5481 So. Packard Ave., Cudahy, Wis.

Pipe fittings, Closed-impression die forgings, Welded or seamless rolled rings.

Branch Offices
Calif., Los Angeles—3321 E. Slauson Ave. LU 3-4681
Calif., San Francisco—420 Market St. YU 2-6360
Colo., Denver—1700 Broadway. MA 3-5371
Wash., Seattle—314 Fairview Ave. No. MA 4-0747

L & L MFG. CO., 8088 E. Nine Mile Rd., Warren, Mich.

Hydraulic flared tube and dryseal pipe fittings.

Representatives
Calif., Bell Gardens—Paul Munroe Co., 6430 E. Gage Ave. LU 7-5226
Colo., Denver—Plant Equipment Co., 1400 Market St. AL 5-5411
Ore., Portland—Ray Bobbs Air-Draulics, Inc., 218 S. E. 12th Ave. BE 2-6133

LEAR, INC., 110 Ionia Ave. N. W., Grand Rapids, Mich.

Rotary and linear actuators, Servos, Servo systems, Remote vehicle controls, Screwjacks, Flexible drives, Power units, Synchros, Pickoffs.

Branch Offices
Calif., San Diego—3308 Hillcrest Stat. CY 6-3158
Calif., Santa Monica—3171 S. Bundy Dr. EX 8-6211
Wash., Seattle—Box 60, Boeing Field. LA 6274

LEDEEN MANUFACTURING CO., 3340 No. Gilman Rd., El Monte, Calif.

Air compressors (portable, stationary), Clutches, Controls (compressed air, hydraulic), Couplings (shaft), Cylinders (air, hydraulic), Reducers, speed (helical gear), Regulators (pressure), Valves (air power line, hydraulic power line).

Representatives
Ariz., Phoenix—Lee Redman Equipment Co., P.O. Box 151, 610 So. 19th Ave. AL 8-3794

Calif., Bakersfield—Hopper Machine Works, P.O. Box 1226, 301 26th St. Phone 4-4991

Calif., Eureka—Eureka Boiler Works, Foot of S St. HI 3-1681

Calif., Los Angeles—Engineering Products Co., 1600 So. San Pedro. RI 9-7044

Calif., Oakland—The Otrich Co., 3664 Grand Ave. TE 2-3781

Colo., Denver—Patten Engineering Co., 1745 Blake St., TA 5-3545

Hawaii, Honolulu—Hawaiian Equipment Co., Ltd., P.O. Box 2990, Phone 8-2921

Nev., Reno—Sierra Machinery Co., P.O. Box 1330, 307 Morrill Ave. Phone 2-6981

Ore., Eugene—American Steel & Supply Co., 44 7th Ave. E. Phone 5-0373

Ore., Medford—American Steel & Supply Co., P.O. Box 1346, Phone 2-7181

Ore., North Bend—Industrial Steel & Supply Co., P.O. Box 824, SK 9-2731

Ore., Portland—Portland Engineering Co., 10895 N.W. Cornell Rd. MI 4-2611

Utah, Salt Lake City—National Equipment Co., 101 W. 2nd So. St. EM 3-8878

Wash., Seattle—Standard Equipment Sales, 1231 First Ave. So. SE 1955

Wash., Spokane—General Machinery Co., P.O. Box 4227, Sta. B, E. 3500 Riverside Ave. KE 1535

LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa.

Electronic indicators, recorders and controllers for combustion and load frequency measurement and control, Electric drive units for positioning dampers and fan louvers, pH measuring equipment, Steam temperature control for superheat and reheat sections, Oxygen measurement and control equipment.

Branch Offices
Calif., Los Angeles—5111 Via Corona Ave. AN 9-3191

Calif., San Francisco—Rm. 705 Grant Bldg., 1095 Market St. MA 1-3464

Colo., Denver—1545 Glenarm Pl. AC 2-1808

Wash., Seattle—1311 Republican St. EL 5505

LELAND ELECTRIC CO. DIV., THE, AMERICAN MACHINE & FOUNDRY CO., 1501 Webster St., Dayton 1, Ohio

Generators (electric), Motors (electric).

Branch Office
Calif., Los Angeles—7046 Hollywood Blvd. HO 9-3639

Representatives
Calif., San Francisco—J. F. Cady, 1485 Bayshore Blvd. JU 5-4108

Colo., Denver—Hubert Kaub & Co., 1025 Santa Fe Dr. MA 3-4606

Ore., Portland—J. E. Edstrom, 1224 S.W. Morrison St. CA 7-1702

Utah, Salt Lake City—Electric Sales Co., 818 E. 21st So. HU 5-0531

LENZ CO., 3301 Klepinger Rd., Dayton 1, Ohio

Fittings and Couplings (air, hydraulic), Hose (air, hydraulic).

Tube Fitting Distributors
Calif., Burlingame—Airdraulic Industrial Products Co., 1104 Carolan Ave. DI 3-2022

Calif., San Diego—Teglen Engineering Co., 2420 University Ave. CY 6-3109

Calif., So. Pasadena—Teglen Engineering Co., P.O. Box 191, RY 1-2856

Colo., Denver—E. C. Wild Co., 1163 So. Cherokee. SH 4-1253

Ore., Portland—Harlan C. McKay Co., 1901 N.W. 26th Ave. CA 7-5565

Hose Coupling Distributors

Calif., Eureka—Bearings & Transmission Products, 2930 Broadway. HI 2-5727

Calif., Fresno—Central Supply Co., 424 M St.

Calif., Fresno—Hubert Clark, 545 W. Vassar Ave.

Calif., Long Beach—Long Beach Welders Supply Co., 1629 West Anaheim St. HE 7-2218

Calif., Los Angeles—Craig Welding & Supply Co., 5670 Santa Fe Ave. LU 7-1221

Calif., Los Angeles—E. A. Key Co., 1947 Santa Fe Ave. MU 5237

Calif., Los Angeles—Victor Equipment Co., 2711 Kettner Blvd. LA 1286

Calif., Oakland—Air Equipment & Supply Co., 3329 Broadway. TE 2-1880, 1

Calif., Oakland—Bay Rubber Co., 8710 G St. LO 9-4587

Calif., Oakland—H. E. Linney Co., 5801 College Ave. OL 3-3161

Calif., San Diego—Bailey Equipment Co., 3856 California St. CY 8-8801

Calif., San Diego—G. S. Parsons, 3211 India St. CY 8-8801

Calif., San Diego—San Diego Welders Supply Co., 3091 Market St.

Calif., Ventura—Crow-Garrick Co., 1885 So. Ventura Ave. MI 3-7657

Colo., Denver—M. L. Foss, 19th & Arapahoe Sts.

Colo., Denver—Gates Rubber Co., 999 So. Broadway. SH 4-1191

LESLIE — LINK-BELT

Colo., Grand Junction—S & M Supply Co., Inc., 735 Fourth Ave. CH 3-2032
N. Mex., Albuquerque—New Mexico Steel Co., 510 Marquette Ave. N.W. Phone 3-3597
Utah, Salt Lake City—Bearings Engineering & Sales Co., 756 So. Second St.
Utah, Salt Lake City—Industrial Supply Co., P.O. Box 600
Wash., Spokane—Equipment Sales & Service, W. 925 First Ave. MA 4-4411
Wash., Spokane—Gibson Welding Supplies, Inc., E. 218 Trent Ave.
Wash., Spokane—Washington Machinery & Supply Co., W. 9 Cataldo Ave.

LESLIE CO., Grant Ave., Lyndhurst, N. J.

Pressure reducing valves, Pressure regulators, Overflow valves, Liquid level controllers, Pressure controllers, Temperature controllers, Single and double seated diaphragm control valves, Pump pressure regulators, Temperature regulators, Self-cleaning strainers, Start-up strainers.

Representatives
Calif., San Francisco—Claude B. Smith Co., 200 Davis St. GA 1-7391
Calif., Santa Ana—Frank Bueche Co., 902 E. 17th St. KI 7-1755
Colo., Colorado Springs—Landes, Zachary & Peterson Co., P.O. Box 1488. ME 5-4066
Colo., Denver—Landes, Zachary & Peterson, 275 Kalamath St. MA 3-6203
N. Mex., Albuquerque—Landes, Zachary & Peterson, 1609 2nd St. N.W. Phone 2-7761
Ore., Portland—John H. Marvin Co., 6106 N.E. 18th Ave. AT 4-7913
Utah, Salt Lake City—Landes, Zachary & Peterson, 2501 So. State. HU 7-7873
Wash., Seattle—John H. Marvin Co., 422 1st Ave. W. AT 4-0331

LEWELLEN MFG. CO., 1428 Tenth St., Columbus, Ind.

Variable speed transmissions, Variable pulleys with special and automatic controls.

Representatives
Calif., Los Angeles—A. W. Nash Co., 2112 So. Atlantic Blvd.
Calif., Oakland—Otrich Co., Grand Ave. at Weldon. TE 2-3781
Ore., Portland—Western Machinery Corp., 1035 S.E. Ninth Ave. BE 6-4117

LICON DIV., ILLINOIS TOOL WORKS, 2501 No. Keeler Ave., Chicago 39, Ill.

Precision electrical switches (limit, basic, toggle, hermetically sealed, subminiature).

Representatives
Calif., Bakersfield—Dunlap Radio & TV Supply Co.
Calif., Chico—Dunlap Radio & TV Supply Co.
Calif., Fresno—Dunlap Radio & TV Supply Co.
Calif., Los Angeles—Graybar Electric Co., Inc., 210 Anderson St.
Calif., Los Angeles—H. G. Rising, Inc., 151 N. Vermont Ave.
Calif., Los Angeles—Universal Radio Supply Co., 1729 So. Los Angeles St.
Calif., Marysville—Dunlap Radio & TV Supply Co.
Calif., Merced—Dunlap Radio & TV Supply Co.
Calif., Modesto—Dunlap Radio & TV Supply Co.
Calif., Pasadena—Electronic Supply Corp., 2085 E. Foothill Blvd.
Calif., Pittsburg—Dunlap Radio & TV Supply Co.
Calif., Sacramento—Dunlap Radio & TV Supply Co.
Calif., San Jose—Peninsula TV & Radio Supply, 656 So. First St.
Calif., Stockton—Dunlap Radio & TV Supply Co., P.O. Box 1970
Calif., Visalia—Dunlap Radio & TV Supply Co.

LIMA ELECTRIC MOTOR CO., INC., Findlay Rd., Lima, Ohio.

Electric motors (selective speeds), Gearmotors, Gear reducers.

Representatives
Calif., Los Angeles—Sales Engineering Service, Inc., 667 Gibbons St. RY 1-1870, SY 8-6397
Calif., San Francisco—Paul D. Jacobs, 420 Market St. HU 2-7266
Colo., Pueblo—L-Z Engineering, 2333 Cortez. LI 3-3883
N. Mex., Las Vegas—George T. Cook, Box 339
Ore., Portland—Donal Co., P. O. Box 7013. CH 6-3131
Wash., Seattle—Starbuck Machine Tool Co., 4111 Airport Way. MU 2260

LINCOLN ENGINEERING CO. OF CALIF., 2844 So. Grand Ave., Los Angeles, Calif. RI 8-0151

Air compressors, Grease guns, Air line accessories, Hose reels (high, low, medium pressure), Motor

oil pumps, Measuring valves, Hose (high pressure, hydraulic, air, grease).

See advertisement on page 21

Branch Offices
Calif., Berkeley—3033 San Pablo Ave. AS 3-6726
Ore., Portland—1018 S.E. 8th Ave. BE 4-7469

Distributors
Ariz., Flagstaff—Motor Supply Co., 13 No. Agassiz St.
Ariz., Phoenix—Colyear Motor Sales Co., 338 W. Adams
Ariz., Phoenix—Kerstiens Parts & Machine, 1321 So. Central Ave.
Ariz., Phoenix—Republic Supply Co., 405 E. Roosevelt St. AL 3-0194
Ariz., Tucson—Colyear Motor Sales Co., 123 No. Sixth Ave.

Ariz., Tucson—Motor Supply Co., 140 So. Sixth Ave.
Calif., Arcata—Arcata Auto Supply
Calif., Avenal—Republic Supply Co., 4th & Skyline Dr. Phone 261
Calif., Bakersfield—Republic Supply Co., P.O. Box 832. FA 7-8471
Calif., Bakersfield—Valley Auto Parts, 130 19th St.

Calif., Eureka—Humboldt Supply Co., 2029 Broadway. HI 2-6457
Calif., Fortuna—Fortuna Auto Supply
Calif., Fresno—Republic Supply Co., 155 Van Ness. Phone 2-7194
Calif., Fresno—Rol Pak Filter Service, 3036 Church St. Phone 2-6811
Calif., Huntington—Republic Supply Co., 1902 17th St. LE 6-4596

Calif., Long Beach—Republic Supply Co., 3080 Cherry Ave. NE 6-6042
Calif., Los Angeles—2600 So. Eastland Ave. PA 80-7151
Calif., Riverside—Allbright's, Eighth & Fairmount

Calif., Sacramento—Knapp Industrial Service, 515 12th St. HU 4-9206
Calif., Sacramento—Republic Supply Co., 1331 T St. HU 4-2807
Calif., San Bernardino—San Bernardino Motor Parts, Inc., Second & F Sts.
Calif., San Francisco—Pauli & Griffin Co., 509 Sixth St. SU 1-4670

Calif., San Francisco—Wait Motor Supply, 234 7th St. HE 1-6116
Calif., San Jose—Republic Supply Co., 442 Park Ave. CY 5-3707
Calif., San Leandro—Republic Supply Co., 1919 Williams St. LO 2-0414

Calif., Santa Maria—Republic Supply Co., Hwy. 101 & Newlove Dr. WA 5-3657
Calif., Stockton—Hickinbotham Bros., 536 So. Aurora. Phone 5-9541
Calif., Taft—Republic Supply Co., 6th & Supply Row. Phone 5-4191
Calif., Ventura—Republic Supply Co., Ventura Ave. MI 3-6158

Ida., Boise—Intermountain Equipment Co., Broadway & Myrtle
Nev., Las Vegas—General Auto Parts, 900 So. Fifth St.
Ore., Portland—Burns Bros. Tire & Supply Co., 621 S.E. Union Ave.
Ore., Portland—Oil Filter Service Co., 615 S.E. Market St.

Wash., Seattle—Campbell Industrial Supply Co., 3433 Airport Way at Spokane St.
Wash., Seattle—Oil Filter Service Co., Inc., 1019 Westlake No.
Wash., Spokane—Intermountain Equipment Co., P.O. Box 2183

Wash., Spokane—A. G. Mohn Co., 102 Sprague Ave. E.

LINDBERG AIR & HYDRAULIC DIV., TEER, WICKWIRE & CO., 1801 Wildwood Ave., Jackson, Mich.

Air and hydraulic cylinders.

Representatives
Calif., Oakland—Rucker Co., 4700 San Pablo Ave. OL 3-5221
Calif., South Gate—Rucker Co., 4956 Firestone Blvd. LU 8-8271
Ore., Portland—Rucker Co., 911 N.W. Hoyt St. CA 3-0205
Wash., Seattle—Rucker Co., 1000 Fourth Ave. So. MA 2783

LINK-BELT CO., Dept. 958-WI, Prudential Plaza, Chicago 1, Ill.

Backstops, Bases (motor), Bearings (babbitted, ball, roller, sleeve), Belting, drives (chain or link, rubber), Belts (timing), Belts, V (rubber), Chains for drives (detachable link, roller, silent transmission, steel, cast, rivetless, premal), Clutches (friction and jaw), Collars (shaft), Couplings (shaft), Fluid drives, Gearmotors, Gears (bevel, helical, worm), Gear drives (in-line helical, parallel shaft, worm), Hangers (shaft), Increasers (speed), Motorgears, Motors (gear, variable speed), Pillow blocks, Pulleys, Reducers, speed (helical gear, parallel shaft, motorized, shaft mounted, spur

gear, worm gear), Sprockets, Take-ups, Transmissions, variable speed, Variable speed drives.

See advertisement on pages 28 & 29

Plants, Branch Stores or District Sales Offices
Calif., Los Angeles—P.O. Box 22056 (1200 Sycamore St., Montebello) RA 3-9341
Calif., San Francisco—400 Paul Ave. JU 7-6400

Colo., Denver—Schloss & Shubart, 1626 Wazee St. AC 2-2741
Ore., Portland—3030 N.W. Industrial St. CA 6-2601
Utah, Salt Lake City—108 So. Fourth W. St. DA 2-2539
Wash., Seattle—3405 Sixth Ave. So. SE 8200
Wash., Spokane—No. 1303 Washington St. FA 8-5820

Distributors

Ariz., Phoenix—Thunderbird Sales Corp., 2255 W. McDowell. AL 4-8874
Ariz., Prescott—Arizona Mining Supply Corp., P.O. Box 110. Phone 310
Calif., Bakersfield—California Truck & Industrial Equipment Co., 2801 Brundage Lane. FA 5-5914
Calif., Colton—Valley Industrial Supply Co., 401 So. 8th St. TA 5-4342

Calif., El Centro—Valley Auto Supply, 633 State St. EL 2-3391
Calif., Eureka—Fred E. Barnett Co., Broadway & Harris Sts. Phone 2-3791
Calif., Fresno—Bearings Supply Co., 2933 Hamilton Ave. AD 2-7144

Calif., Long Beach—Barnes & Delaney, 2600 Atlantic Ave. GA 4-1601, NE 6-1785
Calif., Los Angeles—General Bearings Co., 2017 Santa Fe Ave. TR 2338
Calif., Modesto—Geiger Iron Works, Grand & Willow Sts. LA 3-8387

Calif., Monterey—Sweet Service Co., 534 Washington St. Phone 5-4119
Calif., Oakland—American Ball & Roller Bearing Co., 273 26th St. HI 4-8892
Calif., Oakland—Hoffmeyer Belting & Supply Co., 541 E. Eighth St. TE 4-8636

Calif., Ontario—Valley Industrial Supply Co., Inc., 1170 Holt Blvd. YU 6-3827
Calif., Redding—Cascade Industrial Supply, Inc., Highway 99 So. Phone 1195
Calif., Sacramento—Geiger Iron Works, Inc., 2425 24th St. GL 1-7214

Calif., San Diego—Gould Hardware & Machinery Co., 2212 Main St. BE 2-6174
Calif., San Francisco—Weeks-Howe-Emerison Co., Industrial Div., 750 Harrison St. SU 1-3662

Calif., San Jose—Orchard Supply Hardware, Industrial Div., 720 W. San Carlos St. CY 2-6282
Calif., Santa Cruz—Sweet Service Co., 504 Front St. GA 3-5697

Calif., Stockton—Geiger Iron Works, Inc., Scotts Ave. & Pilgrim St. HO 6-8623
Calif., Ukiah—Fred E. Barnett Co., North Highway 101. HO 2-6554
Calif., Van Nuys—So-Cal Equipment & Supply Co., 7227 Van Nuys Blvd. ST 5-5431, ST 3-2760

Calif., Vernon—Bearing Co., 2017 Santa Fe Ave. TR 2338
Calif., Watsonville—Sweet Service Co., 38 Alexander St. Phone 4-4775
Ida., Boise—Western Bearings, Inc., 520 Front St. Phone 2-6583

Ida., Parma—Transmission Products (Div. Parma Water Lifter Co.) Phone 2-2611
Ida., Pocatello—Western Bearings, Inc., 156 So. Third St. Phone 3518
Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W. Phone 4208

Mont., Great Falls—Carl Weissman & Sons, 300 Third Ave. So. GL 3-0301
Mont., Missoula—Missoula Mercantile Co., 1600 Harker. Phone 9-4147
Nev., Reno—Sierra Industrial Co., Inc., 307 Morrill Ave. FA 3-1301

N. Mex., Albuquerque—Montezuma Bearings Co., 1413 First St. N.W. CH 7-0223
N. Mex., Farmington—Vance Supply Co.
N. Mex., Hobbs—Van Supply Co., 211 So. Grimes St. EX 3-4416

Ore., Coos Bay—Coos Bay Supply Co., 1023 So. Broadway. CO 7-4111
Ore., Eugene—American Steel & Supply Co., 51 E. 7th St. Phone 5-0373
Ore., Klamath Falls—Fred E. Barnett Co. of Oregon, 600 Spring St. TU 4-5153

Ore., Medford—American Steel & Supply, Medford, Inc., 703 So. Grape St. ME 2-7181
Ore., Pendleton—A. W. Davis Supply Co., P.O. Box 676. Phone 761

Ore., Portland—Breeze Supply Co., 237 S.W. Front Ave. CA 7-5447
Ore., Portland—Power Transmission Products (Div. Portland Iron Works), 1107 N.W. 14th Ave. CA 7-1271

Ore., Roseburg—Douglas Supply Co., 649 N.E. Rose St. OR 3-6638
Ore., Salem—Stevens Equipment Co., 110 Division St. EM 4-2281
Utah, Price—H & J Supply Co., 540 S. Third St. W. Phone 1036

Utah, Salt Lake City—Industrial Supply

Co., Inc., 121-135 Social Hall Ave. EM 3-6127
 Wash., Aberdeen—Grays Harbor Equipment Co., 419 So. F. St. Phone 331, 397
 Wash., Everett—Everett Trans. & Rubber Co., 2925 Rucker Ave. BA 6767, 1505
 Wash., Hoquiam—Lamb-Grays Harbor Co., Blaine & Firman Sts. HO 1000
 Wash., Seattle—Bearing Engineering & Supply Co., 65 Horton St. MA 2744
 Wash., Spokane—Carter-Miller Mill Furnishing Co., No. 1320 Ash St. FA 7-8624
 Wash., Walla Walla—Drumheller Co., 1 W. Alder St. WA 48
 Wash., Wenatchee—Wells & Wade Hardware, 201-215 So. Wenatchee Ave. NO 2-7173
 Wash., Yakima—Central Chain & Transmission Co., Inc., 709 So. First St. GL 7-6188
 Wash., Yakima—Yakima Bearings Co., 709 So. First St. GL 7-6188

LOGANSPOUT MACHINE CO., INC., 40 Payson Rd., Logansport, Ind.

Air and hydraulic components for industrial plants.

Representatives
 Ariz., Phoenix—Southwest Machine Tool, Heard Bldg.
 Calif., Los Angeles—Schumann Equipment Co., 5392 Alhambra Ave.
 Calif., Santa Clara—John Gertz, 360 Crestview Dr.
 Co., Denver—Iver J. Esbenson Co., 1725 E. 17th St.
 Wash., Seattle—G. A. Stedman, 2339 Federal Ave.

LORD MFG. CO., 1635 W. 12th St., Erie, Pa.

Vibration control mountings, Shock mountings, Flexible couplings, Machinery mountings.

Branch Office
 Calif., Los Angeles—Suite 702, Hollywood Professional Bldg., 7046 Hollywood Blvd. HO 4-7598

LOUIS ALLIS CO., THE, 427 E. Stewart St., Milwaukee 1, Wis.

Standard and special electric motors (1-2,000 hp.), Gearmotors (1/3-150 hp.), Adjustable speed drives (1-200 hp.).

See advertisement on page 6

Branch Offices
 Calif., Burlingame—1275 Rollins Rd. DI 2-4393
 Calif., Los Angeles—4405 E. Olympic Blvd. AN 8-3621
 Colo., Denver—1025 Santa Fe Dr. MA 3-4606
 Ore., Portland—P.O. Box 7712, AT 4-2187
 Utah, Salt Lake City—818 E. 21st So. HU 5-0531
 Wash., Seattle—708 5th Ave. So. MU 5350
Representatives
 Ariz., Phoenix—Daley Electric Co., 1825 E. Jefferson
 Calif., Arcata—Humboldt Machine Works, 937 Tenth St. Phone 12
 Calif., Burbank—Valley Equipment & Supply, 439 1/2 So. Victory
 Calif., Los Angeles—Progressive Electric Co., 2112 Santa Fe
 Calif., Los Angeles—Sweinhart Electric Co., 2900 E. Olympic, AN 3-7456
 Calif., Sacramento—Van Alstyne & Sons, 2512 Broadway, GL 7-9835
 Calif., San Diego—Gould Hardware & Machinery Co., 2212 Main St.
 Calif., San Francisco—Atlas Electric Co., 617 7th St. KL 2-3676
 Calif., San Francisco—Fred G. Guthrie, 420 Market St. EX 2-8296
 Colo., Denver—Power Transmission Co., 4965 Jackson St. DU 8-1681
 Colo., Denver—Ward Electric, 116 Tenth St.
 Colo., Denver—Weaver Electric, 1721 Larimer St. AL 5-5481
 Ida., Lewiston—Jameson Machinery & Supply, 855 D St. Phone 3-4517
 Ida., Pocatello—C & L Electric Co., 410 So. Main St. Phone 513
 Mont., Billings—Great Northern Tool & Supply, 2224 Minneapolis Ave. Phone 2-2141
 Mont., Great Falls—Mosch Electric Co., 10 Second St. So.
 N. Mex., Albuquerque—Harry Cornelius, 1510 Second St. Phone 3-1776
 N. Mex., Albuquerque—Technical Service Co., 730 Haines St. Phone 7-1508
 Ore., Bend—Central Oregon Iron Works, P.O. Box 807, Phone 74
 Ore., Eugene—Electric Steel Foundry, 1464 W. 6th St. AT 2141
 Ore., Portland—George B. Schetty, 1825 N.W. Vaughn
 Ore., Portland—Stubbs Electric Co., 33 N. W. Park Ave. CA 7-5404
 Utah, Ogden—Johnson Electric Co., 377 22nd St. Phone 9219
 Wash., Yakima—Dodge Yakima Supply, 109 So. Front St. Phone 6495
 Wyo., Casper—Electric Service, 1120 E. B St. Phone 2-7366

LOVEJOY FLEXIBLE COUPLING CO., 4823 West Lake St., Chicago 44, Ill.

Flexible couplings, Pulleys (variable speed), Universal joints (aircraft type), Motor bases, Shaft couplings.

Representatives
 Ariz., Phoenix—E. E. Rempfer Associates, 5714 N. 11th St.
 Calif., Huntington Park—Lovejoy Sales & Service Co., 3370 E. Florence Ave. LU 2-6837
 Calif., Oakland—E. L. Parsons, 600 16th St. TW 3-1577
 Colo., Denver—Spicer-Lindsay Associates, 2475 W. 26th Ave. GR 7-1247
 Hawaii, Honolulu—Von Hamm Young Co., Ltd., P.O. Box 2630
 Ore., Portland—Edward Schiefelblum, 1730 N.W. 25th Ave. CA 3-5345
 Wash., Seattle—Chain Gear, Inc., 822 1st Ave. So. MA 7000

LUNKENHEIMER CO., Beekman St. and Waverly Ave., Cincinnati, Ohio

Iron, bronze, steel, plastic and special alloy valves; Cocks; Grease and oil cups; Gauges; Lubricators; Oilers; Boiler mountings.

Representatives
 Calif., Fullerton—L. Allen Barth, 1043 N. Highland Ave.
 Calif., Los Angeles—Republic Supply Co., P.O. Box 2137, Terminal Annex
 Calif., San Leandro—Lunkenheimer Co., 1919 Williams St.
 Calif., West Covina—Robert A. Miles, 213 Morris Ave.
 Ore., Oswego—Lunkenheimer Co., 13221 S. W. Knaus Rd.

M & E MFG. CO., 2571 Winthrop Ave., Indianapolis 5, Ind.

Air compressors (portable, stationary), Hose (air), Motors (air), Regulators (pressure).

Branch Offices
 Calif., Los Angeles—1347 Washington Blvd.
 Calif., San Francisco—540 Brannon. GA 1-6683

Representative
 Colo., Denver—Ralph Meislahn, Box 5162, AC 2-1795

M-B PRODUCTS, INC., 46 Victor Ave., Detroit 3, Mich.

Filters (airline), Lubricators (airline), Air traps, Portable pneumatic grinders, Regulators (pressure).

Representatives
 Calif., Glendale—Valley Engineers, 418 N. Glendale Ave.
 Calif., Los Angeles—Almquist Brothers, 2300 E. 49th St.
 Calif., Los Angeles—Willard Engineering Co., 2709 S. Hill St.
 Calif., San Diego—Oil Filter Service, 2405 E. Harbor Dr.
 Calif., San Francisco—Transmission Engr., 53 Stevenson St.
 Calif., Woodland Hills—Imperial Tool Co., 22464 Ventura Blvd. DI 8-3032
 Ore., Portland—Hydraulic & Air Equipment, 2316 N. W. Savier St.
 Wash., Seattle—H. F. Soderling Co., 1729 First Ave. So.

MADDEN CORP., 1345 Jarvis Ave., Chicago 26, Ill.

Proportioning pumps, Continuous boiler blow-down systems.

Representatives
 Calif., Los Angeles—Thermal Engineering & Equipment Co., 5469 San Fernando Rd. W. CH 5-3795
 Calif., Los Angeles—Westco Pump Sales Co., 4621 Shella St. AN 2-1155
 Calif., San Francisco—Calpacific Equipment Co., 50 Hawthorne St. GA 1-0697
 Ore., Portland—R. M. Wade & Co., 1919 N.W. Thurman. CA 8-7383

MALSBARY MFG. CO., 845 92nd Ave., Oakland 3, Calif.

Steam cleaners, Steam generators (boilers), Water heaters.

Branch Offices
 Calif., Los Angeles—3923 W. Sixth St. DU 5-5089
 Colo., Denver—2802 So. Race St. SK 6-5911
 Mont., Billings—Industrial Supply Co., 315 Hart-Albin Bldg. Phone 9-3296
 Utah, Salt Lake City—Karl Winter Co., 61 E. Seventh St. ST. EL 5-6275
 Wash., Seattle—6057 35th Ave. N.E. PL 7435
Representatives
 Ariz., Phoenix—Amka Chemical, Inc., 2229 N. 29th Ave. AP 8-0467
 Ariz., Phoenix—Complete Auto Supply & Industrial Div., 501 W. Van Buren
 Ariz., Tucson—Complete Auto Supply & Industrial Div., 506-77 Stone. MA 3-6701
 Calif., Bakersfield—Diefel's, 1614 27th St. FA 4-9669
 Calif., Delano—Green Motor Parts, 1124 High St.
 Calif., Fresno—Haehl Equipment, 1903 No. Hwy. 99. Phone 3-8843

Calif., Hanford—Green Motor Parts, 216 E. Seventh St. LU 2-0431
 Calif., Los Angeles—Delco Chemical, Inc., 2700 So. Eastern Ave. RA 8-9711
 Calif., Los Angeles—Du Bois Co., 300 So. Mission Rd. AN 8-0141
 Calif., Los Angeles—Turco Products, Inc., 441 E. 132nd St. FA 1-2326
 Calif., Maywood—California Pacific Equipment Co., 6004 Walker. LU 5-0469
 Calif., Modesto—Modern Chemical Co., 518 Virginia St. LA 2-0877
 Calif., Oakland—L. D. Berlin, 600 16th St. TW 3-9720
 Calif., Oakland—Vernon Chemical, 10406 Longfellow Ave. LO 9-5893
 Calif., Oakland—S & M Service, 1083 98th Ave. LO 2-3561
 Calif., Oakland—C. M. Ward & Co., 883 Walker Ave. GL 2-1804
 Calif., Palo Alto—Wilson Sales, 465 California Ave. So. DA 2-7468
 Calif., Porterville—Green Motor Parts, 112 Main
 Calif., Sacramento—Continental Chemical, 225 Almont. WA 5-3452
 Calif., Sacramento—Henderson Bros., 1800 23rd St. GL 2-4561
 Calif., Salinas—Lacy Auto Parts, 108 Monterey St. HA 4-2514
 Calif., San Francisco—Edward R. Bacon Co., 2101 Folsom St. HE 1-3700
 Calif., San Diego—Westernlund & Lange, 1432 Union St. BE 2-0115
 Calif., Stockton—Shop Equipment Supply, 1 E. Miner St. HO 4-0326
 Calif., Tulare—Green Motor Parts, 145 No. K St. TU 6-3403
 Colo., Denver—Turco Products, Inc., 2101 Market St. MA 5347
 Mont., Billings—Hines Motor Supply, 14 No. 30th St.
 Ore., Eugene—Jerry's Specialized Sales & Service, 1601 W. Second St. DI 5-0039
 Ore., McMinnville—Davison's Auto Parts, 206 Evans St. Phone 1811, 2862
 Ore., Medford—Witham Parts & Equipment, Fifth & Riverside. Phone 2-6159
 Ore., Portland—Greater Mountain Chemical, 1919 S.E. Third Ave. BE 4-4060
 Wash., Everett—Industrial Equipment, 2202 Everett Ave. BA 8123
 Wash., Seattle—Automotive Steam Cleaners, 3231 Fourth Ave. So. MA 0762
 Wash., Seattle—Ditto Equipment Co., 6747 Empire Way. MO 9850
 Wash., Seattle—Hallidie Machinery, 210 Hudson St. LA 9520
 Wash., Spokane—Modern Machinery Co., E. 4412 Trent Ave. KE 9353
 Wash., Walla Walla—Campbell's Industrial Cleaning, 123 E. Alder. JA 5-2950

MANHEIM MFG. & BELTING CO., 271 Siegel St., Manheim, Pa.

Belting, drive (link), Belts, V (rubber).

Representatives
 Calif., Los Angeles—A. W. Nash, 2112 So. Atlantic Blvd.
 Wash., Seattle—T. T. Watson, 1226 Bailey St.

MANNING, MAXWELL & MOORE, INC., 250 E. Main St., Stratford, Conn. DR 8-8281

Gauges, Valves, Thermometers, Temperature regulators, Transmitters, Dead weight testers, Electronic process control instruments.

Branch Offices
 Calif., Los Angeles—1320 Rio Vista Ave. AN 3-6133
 Calif., San Francisco—450 Bayshore Blvd. MI 8-4305

Representative
 Utah, Salt Lake City—Lang Co., P. O. Box 479. DA 8-8341

MARLIN-ROCKWELL CORP., 402 Chandler St., Jamestown, N. Y.

Bearings (ball, roller), Pillow blocks.

Branch Offices
 Calif., San Francisco—1234 Mariposa St. KL 2-3457
 Colo., Denver—729 Broadway. AL 5-4651

Representatives
 Ariz., Phoenix—Edward D. Maltby Co., 424 W. Jefferson. AL 4-9227
 Calif., Anaheim—Edward D. Maltby Co., 1520 W. Lincoln Ave. PR 4-9292
 Calif., Long Beach—Edward D. Maltby Co., 2041 W. Anaheim St. HE 7-1808
 Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa St. RI 7-9191
 Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LU 2-5304
 Calif., San Diego—Edward D. Maltby Co., 745 15th St. BE 3-7278
 Ore., Portland—Brown Bearing Co., 715 N. E. Davis St. BE 2-6188
 Wash., Seattle—Brown Bearing Co., 2440 First Ave. So. MA 2404
 Wash., Spokane—Brown Bearing Co., W. 1711 Trent Ave. KE 5-3093

MASON-NEILAN — MORGANITE

MASON-NEILAN, a div. of **WORTHINGTON CORP.**, Norwood, Mass. Controllers (liquid level), Control instruments, Valves (diaphragm control, pressure regulating).

Branch Offices
Calif., Los Angeles—2522 E. Olympic Blvd. AN 1-1418
Calif., San Francisco—525 Market St. EX 7-0550
Wash., Seattle—912 Elliott Ave. GA 0141

Representatives
Ariz., Phoenix—George S. Thompson Co., 915 So. Central Ave.
Colo., Denver—Denver Fire Clay Co., 3033 Blake St. TA 5-0251
Utah, Salt Lake City—Denver Fire Clay Co., 225 W. South Temple. Phone 4-5565

McDONNELL & MILLER, INC., 3500 No. Spaulding Ave., Chicago 18, Ill. Boiler water level controls, Safety devices.

Representatives
(All wholesalers of plumbing and heating supplies.)

McGILL MFG. CO., No. Lafayette St., Valparaiso, Ind.

Cam followers, Needle roller bearings, Electrical specialties.

Representatives
Calif., Los Angeles—J. G. Pomeroy Co., 1004 E. Fourth St. MA 1105
Calif., San Francisco—George A. Gray Co., 2720 17th St. HE 1-1526
Ore., Portland—Bearing Sales & Service, 1645 N.W. Hoyt St. CA 3-6301
Wash., Seattle—Bearing Sales & Service, 2908 Sixth Ave. So. MU 0331

McGRAW-EDISON CO., see **BUSS-MANN MANUFACTURING DIV.**
MECHANICAL AIR CONTROLS, INC., 10030 Capital (Oak Park), Detroit 37, Mich.

Valves (air power line).

Representatives
Calif., Oakland—Rucker Co., 4700 San Pablo Ave. OL 3-5221
Calif., South Gate—Rucker Co., 4956 Firestone Blvd. LO 4-2521
Ore., Portland—Rucker Co., 911 N.W. Hoyt St. CA 3-0205
Wash., Seattle—Rucker Co., 1000 Fourth Ave. So. MA 2783

MERCOLD CORP., THE, 4201 Belmont Ave., Chicago 41, Ill.

Mercury switch equipped automatic controls for pressure, differential pressure, temperature, liquid level, mechanical movement, Relays and hermetically sealed mercury contact switches.

Representatives
Calif., Los Angeles—Jensen Instrument Co., 1919 W. Beverly Blvd.
Calif., San Francisco—Jensen Instrument Co., 429 Bryant St.
Colo., Denver—J. M. Warner, 600 W. 48th St.
Ore., Portland—Johnson Heating Supply Co., 232 N.E. 9th Ave.
Utah, Salt Lake City—Stevens Sales Co., 1482 Major St.
Wash., Seattle—E. H. Langdon Co., 72 Vine St.

MERCURY CLUTCH DIV., AUTOMATIC STEEL PRODUCTS, INC., 1201 Camden Ave., S.W., Camden 6, Ohio Clutches (automatic, centrifugal—for gasoline engines and electric motors).

Representatives
Calif., Alhambra—Cox Sales & Engineering, 1819 W. Valley Blvd. CU 3-2351
Calif., Oakland—Dean Lewis Associates, 4385 Piedmont Ave. OL 4-0613
Colo., Denver—J. H. Dorough Co., 7825 W. Colfax Ave. BE 7-2925
Wash., Seattle—Marsh Agencies, 2801 First St. MA 2-8761

Distributors
Ariz., Phoenix—Motor Supply Co., 402-414 No. Central
Ariz., Tucson—Motor Supply Co., 140 So. 6th St.
Calif., Alhambra—Magnet Sales & Service, 1123 Westminster Ave.
Calif., Burlingame—Frank Edwards Co., 1541 Adrian Rd., Millsdale Industrial Park
Colo., Denver—Central Auto Electric Co., 12th Ave. & Lincoln
Utah, Salt Lake City—Frank Edwards Co., 551 So. State St.
Wash., Seattle—Fremont Electric Co., 744 N. 34th St.

METALS & CONTROLS CORP., see **SPENCER DIV.**

MICRO SWITCH, a div. of **MINNEAPOLIS-HONEYWELL REGULATOR**

CO., Freeport, Ill.

Switches (automatic, electric).

Branch Offices
Ariz., Phoenix—4125 N. Seventh Ave. CR 4-7791
Calif., Los Angeles—6620 Telegraph Rd. RA 3-7104
Calif., San Francisco—2 Dorman Ave. AT 8-1221
Colo., Denver—1600 W. 13th Ave. AM 6-2491
Wash., Seattle—401 Pontius Ave. No. MU 4580

Distributors
Ariz., Phoenix—Electric Supply, Inc., 202 S. 7th Ave. AL 2-2343
Calif., Arcata—Industrial Electric Service Co., 960 Fourth St.
Calif., Fresno—Electric Motor Shop, 253 Fulton St. Phone 3-1154
Calif., Glendale—Air Associates, Inc., 1231 Air Way. CL 4-4151
Calif., Los Angeles—Andrews Hardware & Metal Co., 334 S. Main St. MU 6111
Calif., Los Angeles—Radio Products Sales, Inc., 1501 S. Hill St. PR 7471
Calif., Los Angeles—Radio Television Supply Co., 2025 S. Figueroa. RI 8-7131
Calif., Oakland—Western Electro-Mechanical Co., Inc., 300 Broadway. TE 2-8653
Calif., Sacramento—Norcal Electronics, Inc., 1115 R St. GI 3-4668
Calif., San Bernardino—Tri-County Electrical Wholesalers, 453 So. I St. Phone 7896

Calif., San Diego—Pacific Wholesale Electric Co., 702 State St. BE 4-5136
Calif., San Francisco—C. J. Hendry Co., 27 Main St. DO 2-4242
Calif., San Francisco—Phillips & Edwards Electric Corp., 265 Vermont. HE 1-7400
Calif., San Jose—Frank Quemont, Inc., 161 W. San Fernando St.
Colo., Denver—Ryall Electric Supply Co., 500 Lincoln St. AC 2-4521
Ore., Eugene—Tillman & Booth, Inc., 215 W. Fifth Ave. Phone 5-3301
Ore., Portland—North Coast Electric Co., 625 N. W. Everett St. CA 8-5111
Utah, Salt Lake City—Stuart Electric, 13 Kensington Ave. HU 5-5424
Wash., Aberdeen—Industrial Electric Service Co., 319 S. First. Phone 956
Wash., Seattle—North Coast Electric Co., 171 Jackson St. MU 4444
Wash., Spokane—Columbia Electric & Mfg. Co., 3420 Ferry Ave. KE 0611
Wash., Tacoma—Love Electric Co., 1914 Market St. BR 4101

MIDLAND ROSS CORP., see **JOHN WALDEN CORP.**, a div.

MIDLAND-ROSS CORP., see **ROSS, J. O., ENGINEERING**, a div.

MILJAN, INC., div. of **PAUL OMO-HUNDRO CO.**, P.O. Box 396, Paramount, Calif.

Teflon encapsulated cables, Deltameter for measuring small and slow changes in voltage, Floated accelerometer.

Representatives
Calif., Alhambra—M. W. Riedel & Co., 316 E. Valley Blvd. CU 3-4904
Calif., Los Angeles—King Eng. Co., 3931 Prospect Ave. NO 1-0142

NATIONAL CARBON CO., a div. of **UNION CARBIDE CORP.**, 30 E. 42nd St., New York 17, N. Y.

Batteries (dry cell), Brushes for electric motors and generators.

Branch Office
Calif., San Francisco—22 Battery St., YU 2-1360

MILLER FLUID POWER DIV., FLICK-REEDY CORP., 2040 N. Hawthorne Ave., Melrose Park, Ill.

Cylinders (air, hydraulic, job-rated), Boosters (air-hydraulic), Accumulators (air-hydraulic).

Branch Offices
Calif., San Francisco—361 Buckingham. MO 4-3631
Wash., Seattle—314 Lloyd Bldg., Sixth & Stewart. MU 3033

Representative
Calif., So. Pasadena—Teglen Engineering Co., P. O. Box 191. RY 1-2856

MINDER, J. W., CHAIN & GEAR CO., 6011 So. Central Ave., Los Angeles 1, Calif. AD 3-7221

Transmission equipment (mechanical power.)

Branch Office
Ore., Portland—307 S.E. Hawthorne Blvd. BE 6-1131

MINIATURE PRECISION BEARINGS, INC., Precision Park, Keene, N. H. Miniature ball bearings.

Branch Office
Calif., Los Angeles—6214 W. Manchester Ave. OR 8-5329

Representatives
Calif., Fresno—Geo. M. Philpott Co., Inc., 2376 S. Railroad Ave. AM 6-9843
Calif., Long Beach—E. D. Maltby Co., Inc., 2041 W. Anaheim St. HE 7-1808
Calif., Los Angeles—E. D. Maltby Co., Inc., 1940 S. Figueroa St. RI 7-5611
Calif., Maywood—E. D. Maltby Co., Inc., 4035 E. 52nd St. LU 2-5304
Calif., Oakland—Geo. M. Philpott Co., Inc., 2928 Poplar. GL 2-0458
Calif., Sacramento—Geo. M. Philpott Co., Inc., 6260 Folsom Blvd. GL 2-2641
Calif., San Diego—E. D. Maltby Co., Inc., 745 - 15th St. BE 3-7278
Calif., San Francisco—Geo. M. Philpott Co., Inc., 1060 Bryant St. HE 1-5475
Colo., Denver—Bearings Service & Supply, 4433 Claude Ct. AC 2-5991
Ore., Portland—Bearing Sales & Service, Inc., 1645 N. W. Hoyt St. CA 3-6301
Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 0331

MINNEAPOLIS - HONEYWELL REGULATOR CO., see **MICRO SWITCH**, a div.

MODERNAIR CORP., 400 Preda St., San Leandro, Calif.

Controls (compressed air, hydraulic), Cylinders (air, hydraulic), Valves (air power line, hydraulic power line).

Representatives
Ariz., Phoenix—Air-Draulics Co., 3135 No. 29th Ave. AL 8-6441
Calif., Burbank—Elect-Air Tool Co., 310 W. Verdugo Ave.
Calif., Los Angeles—Circle Seal Supply Co., 4863 Telegraph Rd.
Calif., Los Angeles—Huddleston Equipment Co., 1148 So. Los Angeles St.
Calif., Oakland—The H. E. Linney Co., 5801 College Ave.
Calif., Redding—Gerlinger Steel Supply Co., 1527 Sacramento St.
Calif., Sacramento—Capital Machine & Welding Co., 83 No. 17th St.
Calif., San Diego—General Industrial Supply Co., 1115 F St.
Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St. UN 3-5010
Calif., San Francisco—Power-Mac Co., 467 So. Van Ness Ave.
Calif., San Jose—Orchard Supply Hardware, 720 W. San Carlos St.
Calif., Ukiah—Klamath Machine & Locomotive Works of California, 720 State St.
Colo., Denver—Plant Equipment Co., 1863 Wazee St.
Ore., Portland—Western Machinery Corp., 1035 S.E. 9th St.
Utah, Salt Lake City—Equipment Engineering Co., 1761 So. 8th W.
Wash., Seattle—F. H. Soderling Co., 1729 First Ave. So.
Wash., Tacoma—Webster-Robinson Machinery, Puyallup Ave. at A St.

MOLONEY ELECTRIC CO., 5390 Bircher Blvd., St. Louis 20, Mo.

Transformers (power, distribution, load tap changing, regulating, network, subway, dry type, series street lighting), Step voltage regulators, Primary and secondary unit substations.

Representatives
Ariz., Phoenix—Daley Electric Sales Co., P. O. Box 12217. AL 2-2326
Calif., Los Angeles—Garland-Affolter Engineering Corp., Subway Terminal Blvd. MA 4-1864
Calif., San Francisco—Garland-Affolter Engineering Corp., 58 Sutter St. EX 7-1800
Colo., Denver—Hamilton Associates, 1236 Elati St. CH 4-1505
Mont., Butte—R. E. McDonough Co., P. O. Box 278. Phone 2-5447
N. Mex., Clovis—A. W. Graham, P. O. Box 69. PO 3-4244
Ore., Portland—Garland-Affolter Engineering Corp., 1233 N. W. 12th St. CA 3-7349
Utah, Salt Lake City—Riter Engineering Co., 422 Kearns Bldg. EM 3-7933
Wash., Seattle—Garland-Affolter Engineering Corp., 2603 Western Ave. MU 2-4950
Wash., Spokane—Columbia Electric & Mfg. Co., P. O. Box 1441

MPB, INC., see **SPLIT BALLBEARING CORP.**, a div.

MORGANITE, INC., 33-02 48th Ave., Long Island City, N. Y. Bearings (sleeve).

Representatives
Calif., Novato—M. R. Johnson, 1415 W. Court. TW 2-3379
Calif., Santa Ana—C. B. Knispel, 1115 W. 16th St. OX 5-0121

MORSE CHAIN CO., Ithaca, N. Y.
Chain (silent, roller, Hy-Vo), timing belts, speed reducers.

Branch Offices

Calif., Los Angeles—607 So. Hill St. VA 0262
Colo., Denver—1408 W. Colfax Ave. AL 5-8609

Representatives

Calif., Los Angeles—J. W. Minder Chain & Gear Co., 6011 So. Central Ave. AD 3-7221
Calif., San Francisco—Adam-Hill Co., 244-246 Ninth St. MA 4137
Ore., Portland—J. W. Minder Chain & Gear Co., 307 S.E. Hawthorne Blvd. BE 6-1131
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271
Wash., Seattle—Chain Gear, Inc., 820-824 First Ave. So. SE 8010

NATIONAL CARBON CO., a div. of **UNION CARBIDE CORP.**, 30 E. 42nd St., New York 17, N. Y.

Batteries (dry cell), Brushes for electric motors and generators.

Branch Office

Calif., San Francisco—22 Battery St. YU 2-1360

NATIONAL SEAL DIV., Broadway at National Ave., Redwood City, Calif.
Oil and grease seals, Laminated shims, O-rings, Silicone molded products.

Branch Offices

Calif., Downey—11634 Patton Rd. TO 2-8163
Colo., Denver—855 Inca St. AM 6-0547

NATIONAL SUPPLY CO., see **SPANG-CHALFANT DIV.**

NICE BALL BEARING CO., 30th and Hunting Park Ave., Philadelphia 40, Pa.

Ball bearings, Retainers, Shafts.

Distributors

Ariz., Phoenix—Garrett Supply Co.
Ariz., Phoenix—Edward D. Maltby Co., Inc.
Calif., Antioch—Bearing Supply
Calif., Fresno—General Bearings Co.
Calif., Long Beach—Edward D. Maltby Co.
Calif., Long Beach—Pacific Bearings Co.
Calif., Los Angeles—Andrews Hardware & Metal Co.
Calif., Los Angeles—Bearing Sales Co.
Calif., Los Angeles—Bearing Specialty Co.
Calif., Los Angeles—Garrett Supply Co.
Calif., Los Angeles—Edward D. Maltby Co., Inc.
Calif., Los Angeles—Pacific Bearings Co.
Calif., Maywood—Bearing Specialty Co.
Calif., Maywood—Edward D. Maltby Co., Inc.
Calif., Oakland—Bearing Engineering Co.
Calif., Oakland—Bearing Specialty Co.
Calif., Sacramento—Bearing House
Calif., Sacramento—Bearing Specialty Co.
Calif., San Bernardino—Pacific Bearings Co.
Calif., San Diego—Edward D. Maltby Co., Inc.
Calif., San Francisco—Bearing Engineering Co.
Calif., San Francisco—Bearing Specialty Co.
Calif., San Francisco—C. W. Marwedel
Calif., San Jose—Masterson Bearing Co.
Calif., San Leandro—Republic Supply Co. of Calif.
Calif., Stockton—Bearing Supply Co.
Colo., Denver—Bearings Service & Supply Co.
Colo., Denver—Western Belting Co.
Ida., Boise—Western Bearings, Inc.
Ida., Pocatello—Western Bearings, Inc.
Ida., Twin Falls—Western Bearings, Inc.
Ore., Eugene—Bearing Sales & Service, Inc.
Ore., Portland—Bearing Sales & Service, Inc.
Ore., Portland—J. E. Haseltine & Co.
Ore., Roseburg—Bearing Sales & Service, Inc.
Utah, Salt Lake City—Bearings Service & Supply
Utah, Salt Lake City—Industrial Supply Co., Inc.
Wash., Aberdeen—Bearing Sales & Services, Inc.
Wash., Everett—Bearing Sales & Service, Inc.
Wash., Longview—Bearing Sales & Service, Inc.
Wash., Pasco—Bearing Sales & Service, Inc.
Wash., Port Angeles—Bearing Sales & Service, Inc.
Wash., Seattle—Bearing Sales & Service, Inc.
Wash., Seattle—J. E. Haseltine & Co.
Wash., Seattle—Cragin & Company
Wash., Spokane—J. E. Haseltine & Co.
Wash., Tacoma—Bearing Sales & Service, Inc.

NEW YORK AIR BRAKE CO., Hydrex Division, 9000 East Michigan

Ave., Kalamazoo, Mich.

Hydraulic controls, cylinders, motors, pumps, valves.

Representatives

Calif., Oakland—4700 San Pablo Ave. OL 3-5221
Calif., South Gate—4956 Firestone Blvd. LO 4-2521
Ore., Portland—911 N.W. Hoyt St. CA 3-0205

NORGREN, C. A., CO., 3400 So. Elati, Englewood, Colo.

Equipment for processing compressed air, Filters, Pressure regulators, Lubricators (air tools, air cylinders, other air operated equipment and machine components), Relief valves, Flow control valves, Needle valves.

Representatives

Calif., Burlingame—Airdraulic Ind., Prod. Co., 1104 Carolan Ave. DI 3-2022
Calif., South Pasadena—Teglen Engineering Co., 1942 Huntington Dr. RY 1-2856
Colo., Denver—E. C. Wild Co., 1163 So. Cherokee St. SH 4-1258
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271
Wash., Seattle—George W. Warden Co., 1305 Dexter Ave. AT 3-0622, -1441

NUMATICS, INC., Highland, Mich.

Air control valves.

Representatives

Calif., Oakland—Ditzen Engineering & Sales Co., 6002 Telegraph Ave. OL 3-8262
Calif., No. Hollywood—Numatic Engineering, 11224 Burbank Blvd. ST 7-0114
Wash., Seattle—Langlois Air & Hydraulic Co., 500 Wall St. MU 3918

OHIO CARBON CO., 12508 Berea Rd., Cleveland 11, Ohio

Motor, generator brushes (carbon, graphite, metal graphite), Self lubricating bearings (carbon, graphite).

Representatives

Calif., Los Angeles—Tri State Supply, 544 So. San Pedro. MU 2354
Calif., San Francisco—Tri State Supply, 554 Bryant St.
Wash., Seattle—Tri State Supply, 318 Occidental

OHIO GEAR CO., 1333 E. 179th St., Cleveland 10, Ohio.

Gearmotors, Gears (bevel, helical, spur), Gears (worm), Increasers (speed), Sprockets.

Representatives

Calif., Los Angeles—J. W. Minder Chain & Gear Co., 6011 S. Central. AD 3-7221
Calif., So. San Francisco—Adam-Hill Co., 142 Utah Ave. PL 5-3935
Ore., Portland—J. W. Minder Chain & Gear Co., 307 S. E. Hawthorne Blvd. BE 6-1131
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. MA 3-5650

OILGEAR CO., THE, 1560 W. Pierce St., Milwaukee 4, Wis.

Fluid power cylinders, motors, pumps, transmissions and valves.

Branch Offices

Calif., Los Angeles—5327 Santa Monica Blvd. HO 5-3943
Wash., Seattle—914 Arctic Bldg. MA 7445

OKONITE CO., THE, 220 Passaic St., Passaic, N. J.

Wire and cable (electric).

Branch Offices

Calif., Los Angeles—427 W. 5th St. MI 9677
Calif., San Francisco—701 Phelps St. VA 4-7474
Ore., Portland—880 Pittcock Block. CA 8-3173
Wash., Seattle—1904 Third Ave. MA 4-5277

OMOHUNDRO, PAUL CO., see **MILAN, INC.**, a div.

ONAN, D. W., & SONS, INC., 2515 University Ave. S.E., Minneapolis 14, Minn.

Gasoline and diesel engines and accessories. Electric generating plants (gasoline and diesel), controls and accessories.

Branch Offices

Calif., Palo Alto—1588 Edgewood Dr. DA 2-0127
Colo., Denver—2800 Tennyson. GL 5-6786
Ore., Portland—401 S.E. 50th Ave. BE 6-2801

Distributors

Ariz., Phoenix—Aztec Equipment, 2525 Westward Blvd.
Calif., San Francisco—Ets-Hokin & Galvan, 551 Mission St.
Colo., Denver—B. K. Sweeney Co., 1601 23rd St.
Mont. Billings—Great Northern Tool & Supply Co., 2224 Minnesota Ave.
Mont. Great Falls—Brack Motor Supply, 104-106 First Ave. So.
Nev., Reno—Air Service Co., 241 So. Virginia St.

N. Mex., Albuquerque—Industrial Supply Co., 1647 Second St. N.W.
Ore., Portland—Sparks Powerlight, Inc., 1624 S.E. Grand Ave.
Utah, Salt Lake City—Motor Mercantile Co., 54 W. Seventh St.
Wash., Seattle—Fremont Electric Co., 944 No. 34th St.
Wyo., Casper—Power Service Co., 335 So. Ash St.

OPW-JORDAN, 6013 Wiehe Rd., Cincinnati 13, Ohio.

Controls (air compressor, automatic, compressed air, gas, steam, temperature, pressure, valve), Reducers (pressure), Regulators (air, steam, water, hazardous liquids), Valves (check, foot, automatic, gate, globe, poppet, pressure and temperature regulation).

Branch Offices

Calif., Los Angeles—1271 W. Seventh St. TU 4639
Colo., Denver—10 S. Cody St. BE 7-4344

Representatives

Ariz., Tucson—Blackmore Sales Co., 2020 E. 13th St. MA 4-2475
Calif., Los Angeles—Dawn Associates, 3263 Independence Ave. LO 7-7775
Ore., Portland—L. H. Kaeser Co., 1306 N. W. Hoyt St. CA 8-8591
Utah, Salt Lake City—Power Engineering Co., 1806 S. State St. IN 7-6838

ORANGEBURG MFG. CO., INC., 375 Park Ave., New York 22, N. Y.

Fibre conduit for use as protective raceway for underground electric and communication cables.

Branch Offices

Calif., San Francisco—681 Market St. YU 6-0462
Calif., Santa Ana—12391 S. W. Red Hill Ave. LI 4-1226
Wash., Mercer Island—8844 S. E. 39th St. AD 883

Representatives

(Sold throughout the West at all General Electric Supply Co. and Graybar Electric Supply Co. branches)

ORR & SEMBOWER, INC., Morgantown Rd., Reading, Pa.

Automatic packaged boilers, steam and hot water (15-600 hp.), Complete automatic lumber kiln units, Power-Pak boilers (15-25 hp.).

Representatives

Ariz., Phoenix—Cone & Wallace Co., 1325 S. 26th St. BR 5-4496
Calif., Los Angeles—Thermal Eng. & Equipment Co., 5469 San Fernando Rd. W. CH 5-3795
Calif., Oakland—Brose Co., 414 Santa Clara Ave. TE 2-4873
Ida., Boise—Richardson Equipment Co., 612 Front St. Phone 3-9431
N. Mex., Albuquerque—Barnhart & Dwyer, 2500 Garfield S. E.
Ore., Portland—Ponder Oil Burner Co. 309-15 N. E. Wygant. AT 8-4500
Utah, Salt Lake City—Todd Machinery Co. 140 W. Second So. DA 2-4663
Wash., Seattle—Superior Engineering Co. 15th & E. Madison. CA 3300

ORTMAN-MILLER MACHINE CO., INC., 19 143rd St., Hammond, Ind.
Cylinders (air, hydraulic).

Representatives

Calif., Oakland—Rucker Co., 4700 San Pablo. OL 3-5221
Calif., South Gate—Rucker Co., 4956 Firestone Blvd. LO 4-2521
Colo., Denver—Clyde P. Elliott, 661 Delaware St. AL 5-7988
Utah, Salt Lake City—Robert Taylor & Sons, 1077 So. Main St. Phone 6-3090
Wash., Seattle—Rucker Co., 1000 Fourth Ave. So. MA 2783

PANDUIT CORP., 14461 Waverly Ave., Midlothian, Ill.

Plastic wiring duct, Plastic wiring lacing, Electrical terminals (pressure type).

Representatives

Ariz., Phoenix—E. F. Howe, P. O. Box 10152. AM 5-9185
Calif., Los Angeles—California Wholesale Electric Co., 2548 Yates Ave. RA 3-7131
Calif., Los Angeles—Walter Corman, 7432 W. 80th St. OR 4-5833
Calif., San Francisco—Campbell & George Co., 1601 Cortland Ave. MI 8-1236
Calif., San Francisco—Phillips & Edwards El. Corp., 265 Vermont St. HE 1-7400

PARKER-HANNIFIN CORP., see **HANNIFIN CO.**, a div.

PARKER FITTINGS AND HOSE DIV., **PARKER-HANNIFIN CORP.**, 17325 Euclid Ave., Chicago 12, Ohio

Tube and hose fittings, Hydraulic accumulators and check valves.

Representatives

Calif., Glendale—Haskel Eng. & Supply, 1236 So. Central Ave.

PARKER — RESISTOFLEX

Calif., Hayward—Robert B. Porter Co., Municipal Airport.
Calif., Montebello—Metropolitan Supply Co., 1153 Greenwood Ave.
Calif., Oakland—General Mach. & Supply, 1680 14th St.
Calif., San Francisco—Haskel Eng. & Supply, 225 11th St.
Colo., Denver—Metal Goods Corp., 4343 Holly St.
Ore., Portland—Power Transmission Prod., 1107 N.W. 14th Ave.
Utah, Salt Lake City—Pace-Turpin & Co., 726 So. Third West
Wash., Seattle—Palmer Supply Co., 222 Westlake No.

PARKER, SID E., BOILER MFG. CO., INC., 2035 E. 37th St., Los Angeles 58, Calif. AD 3-4211

Hot water boilers, Steam boilers, Water softeners.

Representatives
Calif., Berkeley—Clyde Co., 920 Grayson St. TH 5-6130
Calif., Sacramento—Stocker's Boiler & Welding Works, 500 Broadway, GI 2-3062
Colo., Denver—E. P. Murr Co. 2542 West 28th Ave. GE 3-3334
N. Mex., Albuquerque—Hale Sanitary Supply, 1024 No. 4th St. Phone 7-9555
Ore., Portland—Russ Chamberlin Co., 234 S.E. 12th Ave. BE 2-7124
Wash., Seattle—Brooks & Co., 2605 Second Ave. SE 1570
Wash., Tacoma—New Era Equipment Co., No. 27th & Proctor. PR 1425

PEERLESS ELECTRIC CO., THE, 1401 W. Market St., Warren, Ohio
Motors (electric DC, electric poly-phase and single phase AC).

See advertisement on page 123

Representative
Calif., Los Angeles—Hoyt & Sweet, 1132 E. 12th St.

PHELPS DODGE COPPER PRODUCTS CORP., 300 Park Ave., New York, N. Y.

Copper and copper alloy pipe and tube, Condenser and heat exchanger tube, Power and communications cable, Building wire and cable, Magnet wire, Bare copper (wire, bus bars, extrusions, etc.)

Branch Offices
Calif., Los Angeles—6100 So. Garfield Ave. PA 1-1191
Calif., San Francisco—369 Pine St. EX 2-7379
Ore., Portland—1436 N.W. 16th Ave. CA 6-6117
Wash., Seattle—505 Skinner Bldg. MA 3-6790

PHILADELPHIA GEAR CORP., Erie Ave. and G Sts., Philadelphia 34, Pa.

Industrial gears, Speed reducers, Speed increasers, Gearmotors, Flexible couplings, automatic valve controls, Mixer drives.

Branch Offices
Calif., Gardena—507 E. Olive St. JU 6-1860
Calif., San Francisco—1485 Bayshore Blvd. JU 4-7748
Colo., Denver—1700 15th St. MA 3-3221
Ore., Portland—103 S.W. Front Ave. CA 8-4311
Utah, Salt Lake City—375 S.W. Temple St. DA 2-4811
Wash., Seattle—1016 First Ave. No. MA 3-4949

Representative
Colo., Denver—Andrew T. Lobel, 1700 15th St. MA 3-3221

PIC DESIGN CORP., 477 Atlantic Ave., East Rockaway, N. Y.

Precision gears, Shafts, Couplings, Speed reducers, Differentials, Bearings, Precision breadboard kits for research and development.

Branch Office
Calif., Van Nuys—7335 Van Nuys Blvd. ST 2-6762

PORTER, H. K., CO., INC., see DELTA-STAR ELECTRIC DIV., QUAKER PIONEER RUBBER DIV., W-S FITTINGS WORKS.

POWERS REGULATOR CO., 3400 Oakton St., Skokie, Ill.

Thermostatic water mixing controls, Automatic temperature control systems.

Branch Office
Calif., Los Angeles—3200 W. Temple St. DU 4-4187
Calif., San Francisco—161 Missouri St. UN 1-7471
Colo., Denver—240 Kalamath St. MA 3-3218

Ore., Portland—2809 N.E. 58th St. AT 8-5063
Utah, Salt Lake City—233 W. 13th So. HU 7-7765
Wash., Seattle—511 Second Ave. W. AT 4-8250

Representatives
Mont., Billings—C. L. Boyer & Co., 1002 Division St. Phone 2-3941
N. Mex., Albuquerque—Control & Equipment Co., 5106 Grand Ave., N. E. AL 5-1631

PRECISION RUBBER PRODUCTS CORP., 3110 Oakridge Dr., Dayton 7, Ohio

O rings, Dyna-Seals

Representatives
Calif., Beverly Hills—Airsupply Co., 9815 Wilshire Blvd. BR 2-8111
Calif., Palo Alto—Airsupply Co., 230 Town & Country Village. DA 2-9004
Calif., San Diego—Airsupply Co., P.O. Box 6296
Colo., Denver—Landes, Zachary & Peterson, 275 Kalamath St. MA 3-6203
N. Mex., Albuquerque—Landes, Zachary & Peterson, 1609 Second St., N.W.
Utah, Salt Lake City—Landes, Zachary & Peterson, 1531½ W. Second St.
Wash., Seattle—Airsupply Co., 201 Boren Ave. No. MA 8968

QUAKER PIONEER RUBBER DIV., H. K. PORTER CO., INC., P. O. Box 791, Pittsburg, Calif.

Conveyors, Elevators, Transmission and V-belts, Industrial hose, Fire hose, Molded and extruded products.

Branch Offices
Calif., Los Angeles—4384 E. Bandini Blvd. AN 3-7105
Calif., San Francisco—520 Fourth St. SU 1-5780

QUINCY COMPRESSOR CO., 217 Main St., Quincy, Ill.

Air compressors, Vacuum pumps

Representatives
Ariz., Phoenix—Western Machinery Co., 820 No. 17th St. AL 3-4101
Calif., Los Angeles—Essick Manufacturing Co., 1950 Santa Fe Ave. MA 9-3341
Calif., Los Angeles—Sharpe Manufacturing Co., 1224 Wall St. RI 9-4368
Calif., San Francisco—Quincy Compressor West Coast Distributors, 1185 Mission St. UN 1-3030
N. Mex., Albuquerque—Kohlhaas Tank & Equipment Co., 2212 First St. N.W. CH 3-3766
Ore., Portland—Rogers Machinery Co., 5035 S.E. 17th Ave. BE 4-6478
Wash., Seattle—Rothweiler Co., 5109 Ballard Ave. SU 4-5300

RAYBESTOS DIV., RAYBESTOS-MANHATTAN, INC., P. O. Box 1021, Bridgeport 2, Conn.

Clutch facings (molded Ray-Lok, semi-metallic, full-metallic), CoRayMet clutch facing buttons, Brakes, Woven roll lining, Molded roll lining, Brake blocks, Brake lining, CoRayMet brake band buttons.

Branch Offices
Calif., Los Angeles—156 W. Adams Blvd. RI 7-6394
Calif., San Francisco—600 Fulton St. WA 1-4645
Colo., Denver—1153 Bannock St. AM 6-2306
Ore., Portland—1116 N.W. 17th Ave. CA 8-7259
Wash., Seattle—1525 11th Ave. PR 9300

Representatives
Ariz., Phoenix—H. T. Jones, 1509 E. Alameda Rd. AL 3-0309
Calif., Anaheim—J. H. Miller, Jr., 8282 Keys Lane. JA 7-6146
Calif., Fresno—M. H. Trulock, 938 W. Cortland.

Calif., Glendora—W. E. Holley, 19302 E. Sierra Madre Ave. ED 5-2481
Calif., Los Angeles—J. P. Sink, 922 So. Serrano
Calif., Mountain View—O. O. Oliver, 1654 Lee Dr. YO 7-5854
Calif., Sacramento—R. D. Albright, 1400 Arroyo Grande Dr. IV 7-6095
Calif., San Gabriel—C. J. Masson, 1305 So. Palm Ave. AT 7-1654
Calif., Whittier—R. W. Moreno, 8225 Shadyside Ave. OX 9-5580
Colo., Denver—E. C. Faulds, 2937 So. Harrison. SK 6-2202
Ore., Portland—F. V. Seely, 6448 S.W. 47th Pl. CH 4-8426
Wash., Bellevue—W. T. Jensen, 4406 149th Ave. S.E. GI 9456
Wash., Millwood—J. R. Pumphrey, 3021 N. Maple. Phone 8-7287

RAYBESTOS-MANHATTAN, INC., 61 Willet St., Passaic, N. J.
Belting, drive (composition, rubber), Belts, V (com-

position, rubber), Hose (air, flexible metallic, hydraulic)

Branch Offices
Calif., Los Angeles—4651 Pacific Blvd. LU 8-4254
Calif., San Francisco—131 Mission St. YU 6-6114

Colo., Denver—4500 York St. AC 2-8264
Ore., Portland—1220 S.W. Stark St. CA 7-2261
Wash., Seattle—2450 Sixth Ave. So. EL 6725

REEVES PULLEY CO. DIV., RELIANCE ELECTRIC & ENGINEERING CO., 1225 Seventh St., Columbus, Ind.
Bases (motor, adjustable), Vari-speed Moto drives, Vari-speed motor pulleys, Variable speed transmissions, Flexi-speed drives, Vari-spin drives.

Branch Offices
Calif., Burlingame—1525 Adrian Rd. OX 7-5341
Calif., Los Angeles—2557 Yates Ave. RA 3-8454
Calif., Sacramento—2015 J St. GL 8-1682

Representatives
Colo., Denver—Hamilton Associates, 1236 Eliot St. CH 4-1505
Ore., Portland—Shaffer & Nelson, Inc., 139 S.E. Taylor St. BE 4-7437
Utah, Salt Lake City—C. W. Silver Co., 550 W. Seventh St. EL 5-5378
Wash., Seattle—Shaffer & Nelson, 312 Occidental Ave. MU 0186-7

RELIANCE ELECTRIC & ENGINEERING CO., 24701 Euclid Ave., Cleveland 17, Ohio

Controls (electric motor), Gearmotors, Totally-protected motors, (AC), Super-T motors (DC), Motor generator sets, Adjustable-speed motors, Brakemotors, Variable-speed drives, Variable-speed transmissions.

Branch Offices
Ariz., Phoenix—Hennsey Equip. Sales Co., P.O. Box 789. AL 8-4159
Calif., Los Angeles—2557 Yates Ave. RA 3-8454
Calif., Burlingame—1525 Adrian Road. OX 7-5341

Colo., Denver—Peterson Co., 4949 Colorado Blvd. DE 3-5434
Ida., Boise—C. W. Silver Co., 1118 No. 30th St. Phone 2-6947
N. Mex., Albuquerque—Boyd Industrial Engineering, Inc., 112 W. Granite St. Phone 3-2247
Ore., Portland—Shaffer & Nelson, 189 S.E. Taylor St. BE 4-7437
Utah, Salt Lake City—Clarence W. Silver Co., 850 W. 7th South St. EL 5-5378
Wash., Seattle—Shaffer & Nelson, 312 Occidental Ave. MU 0186
Wash., Spokane—Shaffer & Nelson, P. O. Box 198. FA 7-9528

REMCO MFG. CO., a div. of FIRCO, INC., 934 So. Main St., Willits, Calif. GL 9-5501

Cylinders (heavy duty, special, air, hydraulic, telescopic, hydraulic hoists), Packing (metallic type rod and piston), Sprockets.

REPUBLIC ELECTRIC & DEVELOPMENT CO., 2627 Western Ave., Seattle 1, Wash.

Electric controls, Variable speed drives.

Representatives
Calif., Arata—Industrial Electric Service, Samoa Rd. VA 2-2908
Ore., Portland—Geo. W. Osgood Co., P. O. Box 361. CA 7-1953

REPUBLIC STEEL CORP., STEEL & TUBES DIV., 224 E. 131st St., Cleveland 8, Ohio

Tubing, pressure (including boiler tubing, heat exchanger and condenser tubing), Tubing (electrical metallic), Conduits (rigid threaded).

Branch Offices
Calif., Los Angeles—2900 E. 44th St. LU 2-6276
Calif., San Francisco—Rialto Bldg. GA 1-8728
Colo., Denver—Continental Oil Bldg. MA 3-5289
Wash., Seattle—White-Henry-Stewart Bldg. MA 8583

Representatives
Colo., Denver—C. D. Belt & Co., 1601 So. Glencoe St. SK 6-9421 (for electrical products)
Wash., Seattle—Shaffer & Nelson Co., 312 Occidental Ave. MU 0186 (for electrical products)

RESISTOFLEX CORP., WESTERN DIV., 2919 Empire Ave., Burbank, Calif.

Hose (plastic, rubber).

Branch Office
Calif., Berkeley—1605 Solano Ave. LA 4-0262

Representatives
 Calif., Montebello—Metropolitan Supply, 1153 So. Greenwood Ave. RA 3-9321
 Colo., Englewood—Resistoflex Corp., 131 Summit Blvd. SU 1-8619
 Ore., Portland—Jack Ogle & Co., 3505 S.E. 11th Ave. BE 5-4080
 Wash., Seattle—Jack Ogle & Co., 105 Orcas St. PA 5-2030

REVCO, INC., 1900 Lyndale Ave. So., Minneapolis 5, Minn.

Zero-Max variable speed reducers and control devices, Turk-O-Stat overload protectors (slip clutches).

Representatives
 Calif., Los Angeles—R. Meussdorffer & Associates, 4625 Melrose Ave. NO 5-4193
 Calif., Fresno—William H. Citrin, 2253 W. Barstow. BA 7-0025
 Ore., Portland—W. G. Ballantyne Co., 103 S.W. Front Ave. CA 8-4311

RHOADS, J. E., & SONS, 2100 W. Eleventh St., Wilmington 99, Del.
 Drive belting (leather, plastic), mechanical leather packings.

Representatives
 Calif., Los Angeles—R. H. Hergert, 704 So. Spring St.
 Ore., Portland—C. L. Koerner, 12200 S. E. Oakfield Rd.

RIVETT LATHE & GRINDER, INC., 18 Riverview Rd., Brighton 35, Mass.
 Cylinders (air, hydraulic), Valves (air, hydraulic), Power units (hydraulic).

Representatives
 Calif., Bell—Paul-Munroe Co., 6430 E. Gage Ave. LU 7-5226
 Calif., Oakland—Ditzen Engineering & Sales, 6002 Telegraph Ave. OL 3-8262

ROBBINS AVIATION, INC., 2350 E. 38th St., Los Angeles 58, Calif. LU 9-5221

Dehydration equipment, Valves, Special aircraft equipment.

Representatives
 Calif., Burbank—General Air Equipment, 824 Hollywood Way. VI 9-4686
 Calif., Seattle—A. F. Woolsey, 84 Madison St. EL 7061

ROBBINS & MYERS, INC., MOTOR DIV., 1345 Lagonda Ave., Springfield, Ohio
 Electric motors (fractional, integral hp.).

Representatives
 Calif., Los Angeles—R. Meussdorffer, 4625 Melrose Ave. OL 3-2360
 Calif., San Francisco—C. W. Boswell, 1139 Mission St. HE 1-3435
 Colo., Denver—Howard Toneray, 1732 Blake St. CH 4-1102
 Wash., Seattle—N. R. Schultz Co., Second and Cherry Bldg. SE 6396

ROBERTSHAW-FULTON CONTROLS CO., see FULTON SYLPHON DIV.
ROCKBESTOS PRODUCTS CORP., Nicoll and Canner Sts., New Haven 4, Conn.

Cables (high temperature, aircraft, hookup, coaxial), Wires and cables (asbestos, varnished-cambric, insulated, power, control, lighting).

Branch Offices
 Calif., Los Angeles—4020 W. Third. DU 8-8879
 Calif., Oakland—Oakland Municipal Airport, P.O. Box 2308. SW 8-2955
 Wash., Seattle—6031 Dibble Ave. DE 1369

ROCKFORD CLUTCH DIV., BORG-WARNER CORP., 1301 18th Ave., Rockford, Ill.

Representative
 Calif., Los Angeles—Continental Sales & Service Co., 3817-S. Santa Fe Ave.

ROLLWAY BEARING CO., INC., 541 Seymour St., Syracuse 4, N. Y.
 Bearings (roller).

Branch Offices
 Calif., El Centro—354 E. Main St.
 Calif., Los Angeles—1706 So. Grand Ave. RI 9-8114

Calif., San Diego—1676 Main St. BE 3-6629

Calif., San Francisco—458 Brannan St. SU 1-0972

Ore., Portland—212 N.W. 14th Ave. CA 7-0573

Wash., Seattle—2739 4th Ave. So. MU 3232

ROME CABLE CORP., Ridge St., Rome, N. Y.

Conduits and fittings (electric), Wire and cable (electric).

Branch Offices
 Calif., Los Angeles—2510 So. Malt Ave. RA 3-3631

Calif., San Francisco—1100 Selby St. VA 6-3580
 Utah, Salt Lake City—230 So. Fourth W. EL 9-8811
 Wash., Seattle—3430 Fourth Ave. So. MA 4-3017

ROOTS-CONNERSVILLE BLOWER DIV., DRESSER INDUSTRIES, 900 W. Mount St., Connerville, Ind.

Blowers, Gas pumps (rotary, centrifugal), Vacuum pumps, Gas meters (industrial), Spiraxial compressors.

Branch Office
 Calif., San Francisco—593 Market St. EX 2-0232

Representatives
 Ariz., Phoenix—Ken Smith Co., P.O. Box 6104. AL 8-0901
 Calif., Los Angeles—Preferred Equipment Co., Inc., 5442 Jilison St. RA 3-6391
 Colo., Denver—G. M. Wallace & Co., Denham Bldg., AMF 6-0386
 Ore., Portland—C. L. Koerner, 12200 S. E. Oakfield Rd. OL 4-8773
 Utah, Salt Lake City—G. M. Wallace & Co., Continental Bank Bldg. EM 4-5611

ROSS, J. O. ENGINEERING, a div. of **MIDLAND-ROSS CORP.**, 444 Madison Ave., New York 22, N. Y.
 Dryers, industrial air systems, ovens.

Branch Offices
 Calif., Los Angeles—6417 Bandini Blvd. RA 3-5146
 Wash., Seattle—823 Skinner Bldg. SE 7165

ROSS OPERATING VALVE CO., 120 E. Golden Gate Ave., Detroit 3, Mich.
 Operating control valves for pneumatic and low pressure hydraulics.

Representatives
 Calif., Los Angeles—R. W. Atkinson Co., 3713 Santa Fe Ave. LU 8-5107
 Calif., San Francisco—R. W. Atkinson Co., 655 Folsom St. YU 2-5188
 Colo., Englewood—Alta Eng. Co., 2950 S. Fox St. SU 9-1861
 Ore., Medford—Hydraulic Air Equipment Co., P.O. Box 1572, Phone 3-4079
 Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier St. CA 2-3295
 Wash., Seattle—Hydraulic & Air Equipment Co., 2450 Sixth Ave. So. MU 2-1681

RUCKER CO., THE, 4700 San Pablo Ave., Oakland 8, Calif. OL 3-5221

Test benches, Power units, Centrifuges, Drum filters, Control centers, Controls (compressed air, hydraulic), Cylinders (air, hydraulic), Testing instruments, Hydraulic power pumps, Valves (air power line, hydraulic power line).

Branch Offices
 Calif., South Gate—4556 Firestone Blvd. LO 4-2521
 Ore., Portland—911 N.W. Hoyt St. BE 0205
 Wash., Seattle—1000 4th Ave. So. MA 2783

RUSSELL MFG. CO., E. Main St., Middletown, Conn.

Belts and belting.

Branch Office
 Calif., Oakland—555 Fifth Ave. TW 3-8931

Representatives
 Calif., Los Angeles—C. R. Davis, 422 E. Third St. MU 3144
 Calif., Palo Alto—T. J. Termine, 352 Addison St. DA 5-6282
 Colo., Denver—Michael & Frye, Inc., 3319 W. 36th Ave. GL 5-5915

S&C ELECTRIC CO., 4435 Ravenswood Ave., Chicago 40, Ill.

Power fuses, Distribution cutouts, Disconnects, Load interrupters, Metal-clad switchgear.

Branch Office
 Calif., Burlingame—1640 Rollins Rd. OX 7-1130

Representatives
 Ariz., Phoenix—Randolph Engineering Corp., 1029 N. First St. AL 8-5281
 Calif., San Gabriel—Randolph Engineering Corp., 736 Santa Anita St. CU 3-4183
 Ore., Portland—Andrew L. Polich, Inc., 734 N. W. Glisan St. CA 3-6241
 Utah, Salt Lake City—Ritter Engineering Co., 422 Kearns Bldg. EM 3-7933
 Wash., Seattle—Muth-Richards Co., 1804 Bush Pl. CA 2128

S K F INDUSTRIES, INC., Front St. & Erie Ave., Philadelphia 32, Pa.

Bearings (ball, roller), Pillow blocks, Tyson tapered roller bearings.

Branch Offices
 Calif., Los Angeles—3131 S. Hill St. RI 8-3168
 Calif., San Francisco—790 Tennessee St. MI 8-4625

Colo., Denver—1420-18th St. MA 3-3924

Ore., Portland—1625 N. W. Hoyt St. CA 8-4309

Wash., Seattle—170 Denny Way. SE 4451

S-P MANUFACTURING CORP., 30201 Aurora Rd., Solon, Ohio.

Power chucks, Air and hydraulic cylinders, Valves, Accessories.

Representatives
 Calif., Los Angeles—V. P. Poleos, Box 8537, Crenshaw Sta. AX 3-4571
 Utah, Salt Lake City—Sales Engineering Co., Inc., 526 W. Eighth St. St. EL 5-1162
 Wash., Seattle—Langlois Air & Hydraulics Co., 1443 Northlake Way. ME 3-3747

SALSBUURY CORP., 1161 E. Florence Ave., Los Angeles 1, Calif.

Clutches, Variable speed transmissions.

Representatives
 Calif., Alhambra—J. R. Engine & Supply, 1819 W. Valley Blvd. CU 3-1591
 Calif., San Francisco—H. G. Makelam Co., 655 Bryant St. YU 6-5682

SANGAMO ELECTRIC CO., Springfield, Ill.

Watthour, demand and system survey meters; Power capacitors and controls; Electrolytic, mica and paper capacitors; Instrument transformers; D-c. meters, shunts and circuit breakers; Converters, generators and dynamometers. Complex electronic equipment.

Branch Offices
 Ariz., Tucson—525 S. Grinnell Dr. AX 8-4801
 Calif., Los Angeles—1819 W. Sixth St. DU 7-2336

Ore., Portland—507 Executive Bldg., 811 S. W. Sixth St. CA 3-8742

Representatives
 Calif., San Francisco—L. A. Nott, 1061 Howard St. HE 1-4738
 Colo., Denver—Mountain States Machinery Co., 1526 Blake St. CH 4-7421
 Ida., Boise—J. O. Malvin, 3101 N. 38th St. Phone 4-0148
 Mont., Butte—R. E. McDonough Co., 829 Maryland Ave. Phone 2-5447
 Wash., Seattle—T. R. Wood, 220 Ninth Ave. N. EL 8204

SARCO CO., INC., Empire State Bldg., New York 1, N. Y.

Controls (compressed air, automatic temperature), Regulators (pressure), Traps (self-powered type and electric indicating type, steam), Strainers (pipe line).

See advertisement on page 65

Branch Office
 Calif., San Francisco—1485 Bayshore Blvd. JU 6-1917

Representatives
 Ariz., Scottsdale—A. C. Baechlin, 1237 No. Sunset Trail. WH 5-0903
 Calif., Los Angeles—T. H. Crears Corp., 5706 Airdrome St. WE 6-1141
 Colo., Denver—Equipment Specialties Co., 171 Vallejo St. SH 4-2737
 Ida., Boise—Mechanical Equipment & Engineering, Inc., 919 N. Orchard St. Phone 2-4393

Mont., Billings—Lefler Engineering Sales, 108 No. 23rd St. P.O. Box 1142. Phone 2-2105

N. Mex., Albuquerque—Technical Service Co., 730 Haines Ave. N.W., P.O. Box 131. Phone 7-1508

Ore., Portland—R. H. Brown & Co., 5825 N. W. Front Ave. CA 7-1155

Utah, Salt Lake City—Williams, Gritton & Wilde, 204 Dooley Bldg. EM 4-6421

Wash., Seattle—E. H. Norton, 909 Lloyd Bldg. MU 2-0483

Wash., Spokane—John L. Harvey Co., So. 121 Monroe St. MA 3-3002

A. SCHRADER'S SON, 470 Vanderbilt Ave., Brooklyn 38, N. Y.

Controls (compressed air), Cylinders (air), Hose (air), Regulators (pressure), Valves (air power line).

Branch Office
 Calif., Temple City—6343 N. Trelawny. AT 6-2518

Representatives
 Ariz., Phoenix—Ducommun Metals & Supply Co., 301 S. 26th St. BR 5-4471

Calif., Los Angeles—Ducommun Metals & Supply Co., 4890 S. Alameda St. LU 8-0161

Calif., Los Angeles—Union Hardware & Metals Co., 5555 Ferguson Dr. RA 3-2411

Calif., National City—Ducommun Metals & Supply Co., 1300 Wilson Ave.

Calif., San Francisco—C. W. Marwedel Co., 1325 Mission St. UN 1-2125

Calif., San Leandro—Republic Supply Co., 1919 Williams St. LO 2-0414

Colo., Denver—Johnson Supply Co., 1123 Wazee St. KE 4-3281

N. Mex., Albuquerque—Equipment Sales & Mfg. Co., P. O. Box 1753

Ore., Portland—Russ Chamberlin Co., 234 S. E. 12th Ave. BE 2-7124

SCHRAMM—SPLIT BALLBEARING

Utah, Salt Lake City—Industrial Supply Co., 121-135 Social Hall Ave. Phone 3-6727
Wash., Seattle—Campbell Industrial Supply Co., 3433 Airport Way. MA 5567

SCHRAMM, INC., West Chester, Pa.
Air compressors (portable, stationary).

Branch Office
Calif., Los Angeles—846 E. 6th St. MA 3-4177

Representatives
Calif., San Francisco—Kean Co., 55 Brady St. UN 3-1280
Mont., Helena—Montana Powder & Equipment Co., 12 E. Lawrence. HI 2-2990
Ore., Portland—Hamilton Engine Sales, Inc., 2580 N.W. Upshur St. CA 3-3165
Utah, Midvale—Utah Bit & Steel, Inc., 7580 So. State. AM 5-3544
Wash., Spokane—General Machinery Co., E. 3500 Riverside Ave. KE 4-1535

SHAHER BEARING DIV., CHAIN BELT CO., 801 Burlington Ave., Downers Grove, Ill.

Self aligning roller bearing pillow blocks and cart-
ridges, duplex, flange and take-up units.

Branch Office
Calif., Berkeley—2940 Seventh St. TH 3-6991
Calif., Los Angeles—7601 Telegraph Rd. RA 3-4751
Ore., Portland—2310 N.W. 24th Ave. CA 3-6121
Wash., Seattle—2425 Airport Way. MA 7051

Distributors
Ariz., Phoenix—Garret Supply Co., 2950 W. Thomas Rd.
Ariz., Phoenix—Edward D. Maltby Co., 120 So. Fourth Ave., P.O. Box 1124
Ariz., Tucson—Tucson Bearing Co., 527 No. Stone Ave.

Calif., Bakersfield—Hopper Machine Works, 301 26th St.
Calif., Bakersfield—All Bearing Service, Inc., 2728 Chester Ave.
Calif., El Centro—All Bearing Service, Inc.
Calif., El Centro—Winn Supply Co., 354 E. Main St.

Calif., Eureka—Bearings & Transmission Products, 2930 Broadway.
Calif., Eureka—Eureka Boiler Works & Acme Foundry Co., Foot of S St.
Calif., Fresno—Valley Foundry & Machine Co., 2710 So. East Ave.
Calif., Hayward—All Bearing Service, 1330 Castro St.

Calif., Long Beach—Bay City Bearing Co., 709 W. 16th St.
Calif., Long Beach—Edward D. Maltby Co., 2041 W. Anaheim St.
Calif., Los Angeles—All Bearing Service, Inc., 325 W. 17th St.

Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St.
Calif., Los Angeles—Garrett Supply Co., 3844 So. Santa Fe Ave.
Calif., Maywood—Bay City Bearing Co., Inc., 5275 Atlantic

Calif., Maywood—Edward D. Maltby Co., Inc., 4035 E. 52nd St.
Calif., Oakland—Bay City Iron Works, Fourth and Washington
Calif., Oakland—Bearing Engineering Co., 1019 Harrison St.

Calif., Pomona—Reliable Bearing & Supply Co., 777 E. Second St.
Calif., Redding—Cascade Industrial Supply, Inc., Highway 99 South.
Calif., Riverside—Reliable Bearing & Supply Co., 3545 Main St.

Calif., San Bernardino—Reliable Bearing & Supply Co., 263 So. E St.
Calif., San Diego—All Bearing Service, Inc., 256 Seventh Ave.
Calif., San Diego—Edward D. Maltby Co., Inc., 745 15th St.

Calif., San Diego—Winn Supply Co., 256 Seventh Ave.
Calif., San Francisco—All Bearing Service, Inc., 456 Brannan St.
Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.

Calif., San Francisco—Chas. A. Fowler Co., 979 Bryant St.
Calif., San Jose—Bearing & Equipment Co., 60 So. San Pedro St.
Calif., Santa Maria—The Bearing House, P.O. Box 932, Pescadero Rd.

Calif., Stockton—The Bearing Supply Co., 300 N. Wilson Way
Calif., Stockton—Guntert & Zimmerman Sales Div., Inc., P.O. Box 1688
Calif., Taft—Hooper Machine Works
Calif., Ukiah—Klamath Machinery & Locomotive Works, 720 No. State St.

Calif., Ventura—The Bearing House, 1252 No. Ventura Ave.
Colo., Cripple Creek—Union Supply Co.
Colo., Denver—Bearing Service & Supply Co., 1850 Market St.
Colo., Denver—Colorado Bearing Co., 1601-11 Wazee St.

Colo., Denver—Union Bearing & Transmission Co., 1622 Wazee St.

Colo., Denver—Union Supply Co., 5460 Colorado Blvd.
Ida., Boise—Western Bearings, Inc., 520 Front St.

Ida., Idaho Falls—Bearing Service & Supply Co., Air-Port Rd.
Ida., Lewiston—Jameson Machine & Supply Co., 855 D St.
Ida., Pocatello—Pocatello Chain & Sprocket, Inc., 701 So. First Ave.

Mont., Billings—Bearings Supply Co., 15 No. 31st St., P.O. Box 1391
Mont., Missoula—Power Transmission, Inc., 812 Toole Ave.
N. Mex., Albuquerque—Gorman Engr. Co. of N. Mex., 1330 N. 12th Ave.

N. Mex., Albuquerque—R. L. Harrison Co., Inc., 1801 4th St. N.W., P.O. Box 1320
N. Mex., Albuquerque—Montezuma Bearing Co., 1413 First St. N.W., P.O. Box 593
N. Mex., Carlsbad—Carlsbad Supply Co., P.O. Box 1042

N. Mex., Farmington—C & K Industrial Supply, 635 E. Main St.
N. Mex., Roswell—Clowe & Cowan
Ore., Coos Bay—A. B. Daly Co., 824 No. Front St.

Ore., Eugene—Bearing Sales & Service, 225 Seventh Ave. W.
Ore., Eugene—Harmer Co., 209 Polk St.
Ore., Eugene—Oregon Supply Co., 250 W. Fourth St.

Ore., Klamath Falls—Klamath Machy. Co., 445 Spring St.
Ore., North Bend—Oregon Pacific Co., No. Bend City Dock, P.O. Box G
Ore., Portland—Bearing Sales & Service, 1645 N.W. Hoyt St.

Ore., Portland—General Tool Co., 325 N.W. 15th Ave.
Ore., Portland—Harshberger Equipment Co., 425 S.E. Ninth Ave.
Ore., Portland—H. W. Sharp Co., 71 S. W. Oak St.

Ore., Prineville—Prineville Mach. & Supply Co., P.O. Box 85
Ore., Roseburg—Bearing Sales & Service, 117 So. Stephens St.
Ore., Roseburg—Industrial Supply Co., 132 So. Stephens St.

Ore., Salem—Salem Steel & Supply Co., 180 Court St.
Utah, Helper—Carbon Transfer & Supply Co., P.O. Box 180
Utah, Salt Lake City—Bearings Engineering & Sales Co., 756 So. Second St. W.

Utah, Salt Lake City—Bearing Service & Supply, 1207 So. Main St.
Wash., Aberdeen—Bearing Sales & Service, 317 E. Market St.
Wash., Aberdeen—Whitcher Machinery Co., 411 E. State St.

Wash., Everett—Bearing Sales & Service, Inc., 2803 Grand Ave.
Wash., Everett—Everett Hardware Co., 2718 Broadway.
Wash., Longview—Bearing Sales & Service Co., Longview—Longview Equipment Co.

Wash., Seattle—All Bearing Service, Inc., 2741 Fourth Ave. So.
Wash., Seattle—Bearing Sales & Service, Inc., 2906 Sixth Ave. So.
Wash., Seattle—C. M. Lovsted & Co., Inc., 4000 W. Marginal Way

Wash., Seattle—Washington Machinery Co., 7329 E. Marginal Way
Wash., Spokane—Bitco, Inc., E., 2928 Trent Ave.
Wash., Spokane—General Machinery Co., E. 3500 Block, Riverside Ave.

Wash., Tacoma—All Bearing Service Co., 2324 E. 11th St.
Wash., Tacoma—Bearing Sales & Service, Inc., 1713 Pacific Ave.
Wash., Tacoma—W. S. Walter Co., 1722 Pacific Ave.

Wash., Walla Walla—Morrison Supply Co., 217 E. Alder St.
Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

SKINNER ELECTRIC VALVE DIV., 95 Edgewood Ave., New Britain, Conn.
Stainless steel solenoid valves (for air, water, oil, steam, vacuum and many other media).

Representatives
Calif., San Francisco—Western Control Equipment Co., 3573 Pierce St., WE 1-2155
Calif., Van Nuys—Western Control Equipment Co., 14615 Ventura Blvd. ST 3-3040
Colo., Denver—Automatic Control & Equipment Co., 5750 Pecos St. GE 3-6436

Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier. CA 2-3295
Wash., Seattle—Hydraulic & Air Equipment Co., 2450 Sixth Ave. So. MU 1681
Distributors
Ariz., Phoenix—Air-Draulics Co., 3155 N. 29th Ave. AL 8-6441

Calif., Glendale—Haskel Engineering & Supply, 1236 So. Central. CH 5-6811

Calif., Montebello—Metropolitan Supply Co., 1153 So. Greenwood Ave. RA 3-9321, PA 8-1037

Calif., Oakland—Rucker Co., 4700 San Pablo. OL 3-5221

Calif., San Francisco—California Instrument Co., 351 10th Ave. UN 3-0350
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave. CA 7-1271

SMITH, A. O., CORP., 531 No. Fourth St., Tipp City, Ohio

Gearmotors, Motors (electric, poly-phase and single-phase AC).

Branch Office
Calif., Los Angeles—5715 Smithway St. RA 3-3361
Calif., Oakland—505 66th Ave. LO 9-8994

Representatives
Ariz., Phoenix—Howard Jordan Co., 1007 Grand Ave. AL 2-5183
Calif., Fresno—Electrical Equipment Co., 561 Divisadero St. AM 8-6268
Calif., San Diego—James A. Setchell, 301 W. G St. BE 3-3981

Colo., Denver—Bacon Electric Co., 1240 So. Elizabeth St. PE 3-5547
N. Mex., Albuquerque—A & A Supply Co., 114 Morningside N.E. AL 6-0307
Ore., Grants Pass—R. V. Jones, 1725 Williams Secondary. GR 6-6148

Ore., Portland—A. L. Polich, Inc., 734 N.W. Glisan St. CA 8-2671
Utah, Salt Lake City—Gates Co., 200 So. Main St. EL 9-1101
Wash., Seattle—H. M. Denny Co., 111 W. Harrison. AT 4-0530

SNAP-TITE, INC., 201 Titusville Road, Union City, Pa.

Hydraulic couplings and fittings for aircraft missiles, Quick connect and disconnect couplings, Special couplings, Valves.

Branch Office
Calif., No. Hollywood—6807 Bellaire. ST 7-8573

Representatives
Ariz., Phoenix—Air-Draulics Co., 3135 N. 29th Ave. AL 4-4703
Calif., Los Angeles—Vickery Co., 3312 W. Vernon Ave. AX 1-3100

Calif., Oakland—The Vickery Co., 610 16th St. GL 1-1160
Colo., Denver—Alta Engineering Co., 1988 Nome St. EM 6-3557
Hawaii, Honolulu—Arthur H. deRoche Co., Ltd., P.O. Box 617

Utah, Salt Lake City—C. H. Spencer & Co., 210 W. 33rd St. So. IN 8-8683
Wash., Seattle—Jack Ogle & Co., 105 Orcas St. MO 2030

SPANG-CHALFANT DIV., NATIONAL SUPPLY CO., P. O. Box 416, Pittsburgh 30, Pa.

Conduit (EMT and HD rigid), Electrical underfloor raceways (underfloor duct, headerduct, industrial duct), Service fittings.

Branch Office
Calif., San Francisco—1247 Russ Bldg.

Representatives
Calif., Los Angeles—Murphy-Hain Co., 2133 Bay St.
Colo., Denver—Allen B. Carpenter Co., 1314 Wazee St.
Wash., Seattle—Jack H. Stumph, 1000 Fourth Ave. So.

SPENCER DIV., METALS & CONTROLS CORP., Forest St., Attleboro, Mass.

Thermostats, inherent overheat motor protectors, Motor starting relays, Miniature circuit breakers, Precision switches.

Branch Office
Calif., Pasadena—232 N. Lake Ave. RY 1-4288

SPERRY PRODUCTS, INC., Shelter Rock Rd., Danbury, Conn.

Instruments (measuring and testing).

Branch Office
Calif., Los Angeles—5258 E. Washington Blvd. AN 3-7722

STANDARD PRESSED STEEL CO., P.O. Box 333, Jenkintown, Pa.

Collars (shaft).

Branch Office
Calif., El Segundo—741 Lairport St. OR 8-5382

SPLIT BALLBEARING CORP., a div. of MPB, INC., Mechanic St., Lebanon, N.H.

Bearings (ball).

Branch Office
Calif., Los Angeles—6214 W. Manchester. OR 8-5329

Representatives
Calif., San Francisco—Geo. M. Philpott Co., 1060 Bryant St. HE 1-5475
Colo., Denver—Bearings Service & Supply Co., 4433 Claude Ct. AC 2-5991

Ore., Portland—Bearing Sales & Service, Inc., 1645 N. W. Hoyt St. CA 3-6301

Utah, Salt Lake City—Bearings Service & Supply Co., 1207 S. Main. IN 6-8776

Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 0331
SQUARE D CO., 4335 Valley Blvd., Los Angeles 32, Calif.

Circuit breakers, control centers, ducts, load centers, panelboards, regulators, substations, switches, switchgear equipment.

Branch Offices

Calif., Sacramento—1331 "T" St. GI 2-8332
 Calif., San Diego—Rm. 604, Calif. Theatre. BE 3-7621
 Calif., San Francisco—211 Industrial St. JU 7-4590
 Colo., Denver—677 Alcott St. KE 4-6234
 Ore., Portland—711 S.E. Ankeny. BE 4-8488
 Utah, Salt Lake City—455 E. 4th St. DA 2-5850
 Wash., Seattle—830 Corwin Pl. EA 3-1474
 Wash., Spokane—West 715 Mallon. FA 8-3650

Representatives

Ariz., Phoenix—Sun Valley Electric Mfg., 106 E. Buchanan. AL 8-6448
 Calif., Fresno—Electrical Equipment Co., Echo & Divisadero. AM 8-6268
 Hawaii, Honolulu—A. E. Linzer, 1507 Kapiolani Blvd. 9-12291

SQUARE D CO., see EC&M DIV. STEPHENS-ADAMSON MFG. CO., 85 Ridgeway Ave., Aurora, Ill.

Bearings (ball), Converting, elevating, screening, crushing and power transmission equipment (coal handling and bulk materials handling equipment), Pillow blocks, Reducers, speed (helical gear).

Branch Offices

Calif., Los Angeles—2227 E. 37th St. LU 3-1511
 Calif., San Francisco—145 Mission St. EX 2-4218
 Wash., Seattle—709 Joseph Vance Bldg. MU 3962

Representatives

Colo., Denver—E. N. Murray, 320 Denver Club Bldg. AL 5-0553
 Utah, Salt Lake City—C. H. Spencer, P. O. Box 1054
 Wash., Seattle—D. D. Didrickson, 709 Joseph Vance Bldg.

STERLING ELECTRIC MOTORS, INC., 5401 Telegraph Rd., Los Angeles 22, Calif. RA 3-6211

Electric motors, Geared motors, Speed reducers, Variable speed transmissions.

Branch Offices

Calif., San Francisco—383 Brannan St. SU 1-7997
 Ore., Portland—738 Glisan St. CA 8-4656
 Wash., Seattle—1712 First Ave. So. MA 4-0723

Representatives

Colo., Denver—Clyde P. Elliott, 661 Delaware St. AL 5-7988
 Utah, Salt Lake City—W. H. Pingree, 461 E. 2nd South St. EM 3-6732

STURTEVANT DIV., see WESTINGHOUSE ELECTRIC CORP.

TEECO, 1730 N.W. 25th Ave., Portland 10, Ore., CA 3-5345

Pulleys, Sheaves, Transmission, variable speed.

See advertisement on page 117

Distributors

Calif., Los Angeles—W. H. DelMar Co., 3925 W. Slauson Ave. AX 3-3301
 Calif., Los Angeles—B. B. Supply Co., Inc., 2126 S. Atlantic Blvd. AN 8-3109
 Idaho, Boise—Western Bearings, Inc., 520 Front St. Phone 2-6583
 Idaho, Pocatello—Western Bearings, Inc., 156 So. 3rd St. Phone 3518
 Idaho, Twin Falls—Western Bearings, Inc., 223 - 4th Ave. W.
 Ore., Eugene—Munnell & Sherrill, Inc., 1620 W. 7th Ave. DI 5-8792
 Ore., Newberg—Gibbs Electric Co.
 Ore., Portland—Berg Evans Chain Co., 240 S. W. First Ave. CA 7-5593
 Ore., Portland—McGuire Bearing Co., 213 N. W. 10th Ave. CA 6-2678
 Ore., Salem—Mill Supply Corp., 370 S. Church St. Phone. 2-8989
 Wash., Aberdeen—Mill & Logging Supply Co., 313 So. "H" St.
 Wash., Seattle—Buckner-Weatherby Co., 1743 First Ave. So. MA 3-5103
 Wash., Seattle—Northwest Chains & Sprockets, Inc., 3829 E. Marginal Way. MA 2-8482

TEER, WICKWIRE & CO., see LINDBERG AIR & HYDRAULIC DIV.

TENSOLITE INSULATED WIRE CO., INC., W. Main St., Tarrytown, N. Y.
 Miniature high temperature wire and cable.

Branch Office

Calif., Los Angeles—1516 N. Gardner St.

Representatives

Calif., Redwood City—G. S. Marshall, 2015 El Camino Rd.
 Calif., San Marino—G. S. Marshall, 2065 Huntington Dr.
 Colo., Denver—Allen I. Williams, 126 W. 12th Ave.
 Wash., Seattle—Marsh Agencies, 2601 First Ave.

THERMOID CO., 200 Whitehead Rd., Trenton, N. J.
 Belting, drive (rubber), Belts, V (rubber), Clutches (faces), Hoses (air, hydraulic).

Branch Offices

Calif., Los Angeles—1100 So. Santa Fe Ave. MA 7-9351
 Calif., San Francisco—129 Sylvester St. PL 6-1772
 Ore., Portland—3939 N.W. St. Helen's Rd. CA 2-9765
 Utah, Nephi—Phone 424W

THOMAS FLEXIBLE COUPLING CO., Main Ave. and Biddle St., Warren, Pa.

Couplings (flexible, for mechanical power transmission).

Representatives

Calif., Los Angeles—W. A. Hoppe & Co., 3640 W. 62nd St. AX 3-6072
 Calif., San Francisco—Brooks Equipment Co., 636 Potrero Ave. VA 4-8223
 Colo., Denver—Stearns-Roger Manufacturing Co., 660 Bancroft St. AC 2-8484
 Wash., Seattle—Seattle Equipment & Supply Inc., 4020 Airport Way. MA 3569

THOMSON INDUSTRIES, INC., Manhasset, N. Y.

Ball bushings (ball bearings for linear motion), Nylon bearings (precision nylon bearings), 60-case hardened and ground shafting.

Representatives

Ariz., Tucson—Tucson Bearing Co., 1110 So. Park Ave.
 Calif., Los Angeles—Pacific Bearings Co., 1210 So. Hope St. RI 9-6341
 Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251
 Calif., San Francisco—Bearing Engineering Co., 1547 Mission St. HE 1-1500
 Colo., Denver—Allen Bearings Supply Co., 4970 Jackson St. FL 5-3563
 Colo., Grand Junction—Bearing & Power Transmission Co., 761 So. Seventh St.
 N. Mex., Albuquerque—Montezuma Bearing Service, 1413 First St. N.W.
 Ore., Eugene—Bearing Sales & Service. Phone 5-0325
 Ore., Portland—Bearing Sales & Service, 1645 N.W. Hoyt St. CA 3-6301
 Ore., Roseburg—Bearing Sales & Service
 Utah, Ogden—Bearing Engineering & Sales
 Utah, Salt Lake City—Bearing Engineering & Sales, P.O. Box 1885
 Wash., Aberdeen—Bearing Sales & Service, 317 E. Market St.
 Wash., Everett—Bearings Sales & Service, 2803 Grand Ave.
 Wash., Longview—Bearing Sales & Service
 Wash., Seattle—Bearing Sales & Service, 2908 Sixth Ave. So. MU 0331
 Wash., Spokane—A. G. Mohr Co., E. 102 Sprague Ave.
 Wash., Tacoma—Bearing Sales & Service, 1743 Jefferson Ave. MA 0104

THOR POWER TOOL CO., Prudential Plaza, Chicago 1, Ill.

Belting, drive (rubber) Hoses (air), Motors (air, electric), Tools (portable air, electric), Electric generators.

Branch Offices

Calif., Los Angeles—6200 E. Slauson Ave. RA 3-3191
 Calif., San Francisco—315 So. Van Ness Ave. UN 1-2045
 Colo., Denver—2704 W. 8th Ave., AL 5-3663
 Wash., Seattle—611 E. Pike St. CA 5000

TIMKEN ROLLER BEARING CO., 1835 Dueber Ave. S.W., Canton 6, Ohio

Tapered roller bearings.

Branch Offices

Calif., Los Angeles—2727 So. Flower St. RI 7-4141
 Calif., San Francisco—465 Sixth St. EX 2-4041
 Colo., Denver—2140 E. 45th Ave. AM 6-0275
 Wash., Seattle—305 Ninth Ave., No. MA 1580

TON-TEX CORP., 247 Pearl St., N.W. Grand Rapids 2, Mich.

Belting (power transmission), V-Belt segments (flat and adjustable).

Branch Office

Calif., San Jose—1180 Auzerals Ave.
TORRINGTON CO., 59 Field St., Torrington, Conn.

All types of ball and roller bearings.

Branch Offices

Calif., Los Angeles—4433 Crenshaw Blvd.

SQUARE D—TORRINGTON

AX 3-6139
 Wash., Seattle—1731 First Ave. EL 2252

Representatives

Ariz., Phoenix—Edward D. Maltby Co., 424 W. Jefferson St.
 Calif., Anaheim—Edward D. Maltby Co., 1520 W. Lincoln Ave.
 Calif., Baldwin Park—Valley Industrial Supply, Inc., 5140 Rivergrade Rd.
 Calif., Colton—Valley Industrial Supply, 401 So. Eighth St.
 Calif., Fresno—General Bearings Co., 2820 Church Ave.
 Calif., Fresno—George M. Philpott Co., 2376 Railroad St.
 Calif., Long Beach—Bay City Bearing Co., Inc., 709 W. 16th St.
 Calif., Long Beach—Edward D. Maltby Co., 2041 W. Anaheim Blvd.
 Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St.
 Calif., Los Angeles—Edward D. Maltby Co., 1940 So. Figueroa St.
 Calif., Maywood—Bay City Bearing Co., Inc., 5275 Atlantic Blvd.
 Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St.
 Calif., Modesto—Geiger Iron Works, Inc., 124 Willow
 Calif., Modesto—Girardi Bearing Co., 717 I St.
 Calif., Oakland—Bearing Industries, Inc., 181 Tenth St.
 Calif., Oakland—George M. Philpott Co., 2928 Poplar St.
 Calif., Ontario—Valley Industrial Supply, 1170 W. Holt Blvd.
 Calif., Sacramento—Bearing House, 318 16th St.
 Calif., Sacramento—Geiger Iron Works, 2425 24th St.
 Calif., Sacramento—George M. Philpott Co., 6260 Folsom Blvd.
 Calif., Salinas—Girardi Bearing Co., 257 John St.
 Calif., San Diego—Edward D. Maltby Co., 745 15th St.
 Calif., San Francisco—All Bearing Service, Inc., 456 Brannan St.
 Calif., San Francisco—Bearing Industries, Inc., 266 Bay Shore Blvd.
 Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St.
 Calif., San Francisco—George M. Philpott Co., 1060 Bryant St.
 Calif., Stockton—Geiger Iron Works, Inc., Scotts Ave. and Pilgrim St.
 Calif., Stockton—Jones Bearings Co., 443 So. Wilson Way
 Colo., Denver—Bearings Service & Supply Co. of Colorado, 4433 Claude St.
 Colo., Denver—Colorado Bearing Co., 1618 Wazee St.
 Colo., Grand Junction—Bearings Service Co., 12th and Ute.
 Ida., Boise—Western Bearings, Inc., 520 Front St.
 Ida., Idaho Falls—Bearings Service & Supply Co. of Idaho, Airport Rd.
 Ida., Lewiston—Jameson Machine Supply, 12th and Idaho Sts.
 Ida., Pocatello—Western Bearings, Inc., 156 So. Third St.
 Ida., Twin Falls—Western Bearings, Inc., 223 Fourth Ave. W.
 Mont., Billings—Bearings Supply Co., Second Ave. N. at 12th St.
 Mont., Billings—Power Transmission Equipment, 20 No. 33rd St.
 Mont., Great Falls—Carr Weissman & Sons, 300 Third Ave. So.
 Nev., Reno—Styris-Sutton Co., 622 So. Virginia St.
 N. Mex., Albuquerque—Montezuma Bearing Service, 1413 First St. N.W.
 N. Mex., Farmington—Vance Supply Co., 813 Schofield Lane.
 N. Mex., Hobbs—Vance Supply Co., 211 So. Grimes
 Ore., Coos Bay—Bearing Supply Co., 894 So. Broadway
 Ore., Eugene—Bearings Sales & Service, Inc., 225 Seventh Ave. W.
 Ore., Eugene—Bearing Supply Co., 234 W. Sixth Ave.
 Ore., Klamath Falls—Specialized Bearing Service, 1440 Main St.
 Ore., Portland—Bearings Sales & Service, Inc., 1645 N.W. Hoyt St.
 Ore., Portland—General Bearing Co., 325 N.W. 15th St.
 Ore., Portland—George M. Philpott Co., 2353 N. W. 21st Ave.
 Ore., Roseburg—Bearings Sales & Service, Inc., 460 N.E. Garden Valley Blvd.
 Ore., Roseburg—Bearing Supply Co., 1338 S. E. Stephens St.
 Utah, Ogden—Bearing Engineering of Ogden, 1670 Washington Blvd.
 Utah, Salt Lake City—Bearing Engineering & Sales Co., 756 So. Second W.
 Utah, Salt Lake City—Bearings Service & Supply Co. of Utah, 1207 So. Main St.
 Utah, Salt Lake City—Utah Bearing Co., 626 S.W. Temple
 Wash., Aberdeen—Bearing Sales & Service, Inc., 317 E. Market St.

TRIANGLE CONDUIT—VICTOR BALATA

Wash., Everett—All Bearing Service, Inc., 2925 Rusker Ave.
 Wash., Everett—Bearing Sales & Service, Inc., 2803 Grand Ave.
 Wash., Longview—BESCO of Longview, 1005 15th Ave.
 Wash., Longview—Bearing Sales & Service, Inc., 743 Commerce St.
 Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St.
 Wash., Port Angeles—Bearing Sales & Service, Inc., Valley at Second.
 Wash., Seattle—All Bearing Service, Inc., 2741 Fourth Ave. So.
 Wash., Seattle—Bearing Engineering & Supply Co., 2548 Airport Way.
 Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So.
 Wash., Spokane—A. G. Mohn Co., E. 102 Sprague St.
 Wash., Tacoma—All Bearing Service, Inc., 2324 E. 11th St.
 Wash., Tacoma—Bearing Sales & Service, Inc., 1743 Jefferson Ave.

TRIANGLE CONDUIT & CABLE CO., INC., P.O. Box 711, New Brunswick, N. J.

Electric wire; Power, lighting and control cable; Hot dipped galvanized conduit; Black enameled conduit; Electric metallic tubing; Flexible conduit; Plastic pipe and fittings, Copper tube.

Branch Offices
 Calif., Los Angeles—6466 Fleet St. RA 3-3687
 Calif., San Francisco—2415 17th St. UN 3-6260
 Colo., Denver—142 Broadway. SP 7-2375
 Wash., Seattle—1201 Fourth Ave. So. MU 2-3971

TULSA WINCH DIV., VICKERS, INC., 815 E. First St., Tulsa 20, Okla.

Power take-offs, Winches, Speed reducers, Transmissions, Power dividers, Two-speed hanger bearings.

Distributors
 Ariz., Phoenix—Auto Safety House, 238 W. Jefferson. Phone 4-5545
 Ariz., Phoenix—Welch Mfg. Co., 533 W. Jefferson. AL 8-0276
 Calif., Los Angeles—Standard Auto-Body Co., Inc., 4900 So. Solo St. LY 3-1471
 Calif., Lynwood—Rankin Bros., 11090 So. Alameda. NE 6-1929
 Calif., San Francisco—Modern Vehicle Co., 2044 Bryant St. AT 2-7414
 Colo., Denver—Winter-Weiss Co., 2201 Blake St. MA 3-6233
 Ida., Boise—Lang Co., 420 No. Curtis Rd. Phone 8311-W
 Mont., Billings—Great Northern Tool & Supply Co., 2224 Minnesota Ave. Phone 2-2175
 Mont., Great Falls—Smith Equipment Co., 820 Ninth St. No. Phone 2-1713
 Mont., Kalispell—Industrial Supply Div., Forest Products Co., 175 N.E. Railroad St. Phone 5900
 N. Mex., Albuquerque—Hobbs Trailer Co., 824 Arno N.E. Phone 3-3793
 N. Mex., Farmington—C & K Industrial Supply, 635 E. Main. DA 5-5621
 N. Mex., Hobbs—Watson Truck & Supply, P. O. Box 1288. EX 3-3161
 Ore., Eugene—Western Equipment Co., 1360 W. First St. EU 4-4265
 Ore., Portland—Western Equipment Co., 2244 N. W. Savier St. CA 8-4128
 Utah, Salt Lake City—Lang Co., Inc., First So. and Second W. DA 8-8341
 Wash., Seattle—Transport Trailer & Equipment Co., Inc., 3400 Sixth Ave., So. MU 2226
 Wash., Spokane—Andrews Equipment Service of Washington, Inc., E. 4620 Trent Ave. KE 5-1604
 Wyo., Casper—Emrick & Hill Engine & Equipment Co., 1701 E. Yellowstone. Phone 2-5341

TURLOCK IRON & MACHINE WORKS, P.O. Box 609, Turlock, Calif.

Cylinders (air, hydraulic).

Representatives
 Calif., Stockton—Grether & Grether, P. O. Box 47. HO 2-4124
 Calif., Whittier—Grether & Grether, P. O. Box 1036. OW 7-7812

TUTHILL PUMP CO., 939 E. 95th St., Chicago 19, Ill.

Positive displacement internal-gear rotary pumps.

Representatives
 Calif., Los Angeles—Wagner Hydraulic Equipment Co., 10814 Santa Monica Blvd. BR 2-2091
 Calif., San Francisco—Sweetland Co., 151 Mission St. GA 1-2663
 Colo., Denver—Ernest Ritchie Co., 1305 So. Ivanhoe Way. SK 6-1057

Wash., Seattle—Sweetland Co., 1250 First Ave. So.

TWIN DISC CLUTCH CO., 1328 Racine St., Racine, Wis.

Clutches, Fluid couplings, Friction and fluid drives for industrial applications, Gears (reverse and reduction), Power take-offs, Torque converters.

Branch Office
 Calif., Los Angeles—2950 Leonis Blvd. LO 8-3309

Representatives
 Ariz., Phoenix—Arizona Equipment Sales, Inc., 2812 Grand Ave.
 Calif., Bakersfield—California Truck & Industrial Equipment Co., 2810 Brundage Lane
 Calif., Huntington Park—N. A. D'Arcy Co., 7535 Marbrisa St., P.O. Box 447
 Calif., Sacramento—California Equipment Co., 2231 Fourth St.
 Calif., San Francisco—California Equipment Co., 660 Bryant St.
 Calif., San Francisco—Charles A. Fowler Co., 979 Bryant St.
 Colo., Denver—Industrial Equipment Co., 4999 Jackson St.
 N. Mex., Hobbs—Vance Supply Co., 211 So. Grimes St.
 Ore., Portland—Hydra-Lines, Inc., 511 S.E. Market St.
 Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave.
 Utah, Salt Lake City—Diesel Electric Service & Supply, 60 E. 13th So. St.
 Wyo., Casper—Emrick & Hill Engine & Equipment Co., 1701 E. Yellowstone
 Wash., Seattle—Chain Gear, Inc., 822 First Ave. So.
 Wash., Spokane—Bitco, Inc., E. 4115 Trent Ave.

UNION CHAIN & MFG. CO., Edgewater Ave., Sandusky, Ohio

Belting, Chains (roller, silent transmission, engineering, drive and conveying), Couplings (chain type), Sprockets.

Branch Office
 Ore., Portland—206 S.W. Stark St. CA 8-9211

Representatives
 Calif., Los Angeles—American Chain & Gear, 2451 E. 57th. LU 1-7215
 Calif., San Francisco—Charles A. Fowler Co., 899 Bryant St. UN 8-5010
 Calif., Stockton—Stockton Iron Works, Harrison and Lindsay Sts. HO 6-7091
 Colo., Denver—Power Transmission, Inc., 4965 Jackson St. DU 8-1681
 Mont., Great Falls—Brack Motor Supply Co., 104-106 First Ave. Phone 4-4346
 Mont., Missoula—Power Transmission, Inc., 802 Toole Ave. Phone 9-4188
 N. Mex., Carlsbad—Union Industrial Corp., 112 E. Mermod. TU 5-2187
 Ore., Eugene—Munnell & Sherrill, Inc., 1450 W. 7th St. Phone 4-3287
 Ore., Portland—Munnell & Sherrill, Inc., 400 S.W. First Ave. CA 8-7365
 Utah, Salt Lake City—Lundin & May Foundry, 454 W. 5th St. No. Phone 9-2005
 Wash., Longview—Longview Equipment Co.
 Wash., Seattle—Bearing Engineering & Supply, 2548 Airport Way. MA 2744

U. S. ELECTRICAL MOTORS, INC., 200 E. Slauson Ave., Los Angeles 54, Calif.

Electric motors, Gear motors, Variable speed motors.

Branch Offices
 Ariz., Phoenix—114 E. Roosevelt St. AL 8-2693
 Calif., Bakersfield—1817 H. St. FA 3-7369
 Calif., Fresno—155 Van Ness Ave. AM 6-0689
 Calif., Sacramento—1425 R St. HI 6-6556
 Calif., San Francisco—564 Fourth St. GA 1-7625
 Calif., San Jose—442 Park Ave. CY 3-8580
 Colo., Denver—40 W. 49th Ave. MA 3-0281
 Utah, Salt Lake City—Rm. 212, Beason Bldg., EM 4-6219
 Wash., Seattle—3427 4th Ave., So. MA 4-0614

UNITED STATES GAUGE DIV., AMERICAN MACHINE & METALS, INC., Sellersville, Pa.

Instruments (measuring and testing).

Branch Office
 Calif., Los Angeles—11973 San Vicente Blvd. GR 2-9584

Representatives
 Calif., Berkeley—J. S. Page Co., 570 Coventry Rd. LA 4-5517
 Calif., Los Angeles—W. R. Ladewig Co., 5608 E. Washington Blvd. RA 3-6371
 Colo., Denver—E. P. Cook Co., 1863 Wazee St. KE 4-2371
 Wash., Seattle—Instrument Laboratory, 934 Elliott Ave. W. AL 5850

UNITED STATES RUBBER CO., MECHANICAL GOODS DIV., 1230 Ave. of the Americas, New York 20, N. Y.

Belts (conveyor, drive, V-belts, all rubber or rubber-fabric, rubber timing), Hose, Switchboard matting, Linemen's equipment (rubber gloves, clothing).

UNIT MFG. CO., 18 W. 26th St., Minneapolis 4, Minn.

Controls (hydraulic), Cylinders (air, hydraulic), Motors (hydraulic), Pumps (hydraulic power), Valves (hydraulic power line).

Representatives
 (Contact factory for names and addresses of representatives in the West)

UNIVERSAL METAL HOSE CO., 2133 S. Kedzie Ave., Chicago 23, Ill.

All-metal flexible hose.

Representatives
 Calif., Los Angeles—Guy L. Warden & Sons, 203 W. 12th St. RI 7-0541
 Calif., San Francisco—Calpac Equipment Co., 50 Hawthorne St. GA 1-0697

VALVAIR CORP., 454 Morgan Ave., Akron 11, Ohio

Valves (air, solenoid, manual, hydraulic).

Representatives
 Calif., Eureka—Bearings & Transmission Products, 2930 Broadway. HI 2-5727
 Calif., South Pasadena—Teglen Engineering Co., 1942 Huntington Dr. PY 1-2856
 Colo., Denver—E. C. Wild Co., 1163 So. Cherokee St. SH 4-1253
 Ore., Portland—Power Transmission, 1107 N.W. 14th Ave. CA 7-1271
 Wash., Seattle—Chain Gear, 820-824 First Ave. MA 7000

V-BELT CLUTCH CO., 418 No. Western Ave., Los Angeles 4, Calif. HO 5-5082

Ball-Lok V-belt clutches, two-speed and reverse drive clutches for use on gas engines, electric motors, high speed intermittent clutching and industrial drives to 5 hp.

Distributors
 Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.
 Colo., Denver—Western Belting Co., 1720 W. 2nd St.
 Wash., Seattle—Chain Gear, Inc., 820-824 First Ave. So.

VERSA PRODUCTS CO., INC., 249 Scholes St., Brooklyn 6, N. Y.

Versa valves.

Representatives
 Calif., Los Angeles—E. D. Sweetland Co., 5403 Sheila St. RA 3-0117
 Calif., San Francisco—E. D. Sweetland Co., 151 Mission St. GA 1-2663
 Ore., Portland—Ray Hobbs Air-Draulics, 218 S.E. 12th Ave. BE 2-6133
 Wash., Seattle—George W. Warden Co., Inc., 1305 Dexter Ave. AL 0622

VICKERS, INC., Administrative & Engineering Center, Detroit 32, Mich.

Complete hydraulic power systems, hydraulic pumps, transmissions, valves, motors, cylinders, power units, steering boosters.

Branch Offices
 Calif., Berkeley—920 Grayson St. AS 3-4997
 Calif., El Segundo—2160 E. Imperial Hwy. OR 8-2503
 Calif., Torrance—3201 Lomita Blvd. DA 6-8550
 Ore., Portland—1744 S.E. Hawthorne. BE 4-9446
 Wash., Seattle—623 Eighth Ave. So. MU 6850

VICKERS, INC., see also TULSA WINCH DIV.

W-S FITTINGS WORKS, a div. of H. K. PORTER CO., INC., P. O. Box 95, Roselle, N. J.

Hydraulic pumps and jacks.

Branch Offices
 Calif., Anaheim—630 Amboy St. KE 5-5475
 Wash., Seattle—301 Jones Bldg. MA 2-3496

Sold through leading distributors everywhere.

VICTOR BALATA & TEXTILE BELTING CO., 53 Park Pl., New York 7, N. Y.

Belting for machinery purposes (solid woven, canvas stitched, Neoprene, Hycar, balata).

Factory Representatives

Calif., Orinda—High Reed, 45 Loma Vista Dr.
Calif., South Pasadena—T. H. Hinchcliffe, P. O. Box 221
Ore., Portland—S. Alex Turnley, 4433 N. E. Failing St.

Distributors

Calif., Fresno—Elliott Mfg. Co., 1734 Ventura St.
Calif., Los Angeles—Degen Fiege Co., 4559 E. Sheila St.
Calif., San Francisco—Pacific Coast Rubber Co., 51 Main St.
Colo., Denver—Western Belting Co., 1720 Wazee St.
Ore., Portland—Goodyear Rubber & Asbestos Co., 205 N. W. Fifth Ave.
Utah, Salt Lake City—Mountain States Rubber Co., 131 Social Hall Ave.
Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave.
Wash., Seattle—Washington Belting & Rubber Co., 2761 First Ave. S.
Wash., Spokane—Nott-Atwater Co., S. 157 Monroe St.
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St.

WADSWORTH ELECTRIC MFG. CO.,
Covington, Ky.

Circuit breakers, Controls (electric), Load centers, Panelboards (electric), Service equipment, Switches (electric, safety), Wiring troughs.

Representatives

Calif., Los Angeles—Agencies Co., 836 Traction Ave. MI 1925
Calif., San Francisco—Hodges & Glomb, Inc., 921 Bryant St. UN 1-2367
Colo., Denver—L. S. Reed & Co., 1018 Lawrence St. AL 5-1777
Ore., Portland—Bruce-Emmett Co., 830 S. E. Alder St. BE 2-8117

WAGNER ELECTRIC CORP., 6400
Plymouth Ave., St. Louis 14, Mo.

Motors, Transformers.

Branch Offices

Calif., El Segundo—610 Lairport. OR 8-7671
Calif., So. San Francisco—219 Shaw Rd. PL 6-0520
Colo., Denver—1526 Blake St. CH 4-7421
Ore., Portland—3460 N.W. Industrial St. CA 7-3654
Utah, Salt Lake City—165 So. 1st W. EM 3-5013

WALDEN, JOHN, CORP., a div. of
MIDLAND ROSS CORP., P. O. Box
791, New Brunswick, N. J.

Couplings (shaft).

Distributors

Calif., Belmont—Western Gear Corp., P. O. Box 126
Calif., Los Angeles—Preferred Equipment Co., 5442 Jillion St.
Calif., Lynwood—Western Gear Corp., 2600 Imperial Highway
Ore., Portland—Western Gear Corp., 930 S. E. Oak St.
Wash., Seattle—Western Gear Corp., 417 Ninth Ave. So.

WALDES KOHINOOR, INC., 47-16
Austel Pl., Long Island City 1, N. Y.

Retaining rings, Pliers, Applicators, Dispensers, Grooving tools, Industrial fasteners.

Branch Offices

Calif., Los Angeles—10554 Lauriston Ave. BR 0-4064
Calif., Pleasant Hill—105 Stevenson Dr. YE 4-0734

Distributors

Ariz., Phoenix—Edward D. Maltby Co., Inc., 424 W. Jefferson St. AL 4-9227
Calif., Anaheim—Edward D. Maltby Co., Inc., 1520 W. Lincoln. FR 4-9292
Calif., Fresno—General Bearings, 2820 Church Ave. AD 7-7104
Calif., Long Beach—Edward D. Maltby Co., Inc., 2041 W. Anaheim St. HE 2-5494
Calif., Los Angeles—Edward D. Maltby Co., Inc., 1940 S. Figueroa St. RI 7-5611
Calif., Maywood—Edward D. Maltby Co., Inc., 4035 E. 52nd St. LU 2-5304
Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251
Calif., Sacramento—Bearing House, 318 16th St. GI 2-1087
Calif., San Diego—Edward D. Maltby Co., Inc., 745 Fifteenth St. BE 3-7278
Calif., San Francisco—Bearing Engineering Co., 1547 Mission St. HE 1-1500
Colo., Denver—Bearings Service & Supply Co., 4433 Claude Ct. AC 2-5991
Ida., Idaho Falls—Bearings Service & Supply Co., Airport Rd. Phone 3150
Mont., Missoula—Industrial Bearing Co., 123 W. Alder St. Phone 3-3723
Ore., Eugene—Bearing Sales & Service, Inc., 225 Seventh Ave. W. DI 5-0325
Ore., Portland—Bearing Sales & Service, Inc., 1645 N. W. Hoyt St. CA 3-6301

Ore., Roseburg—Bearing Sales & Service, 460 N. E. Garden Valley Rd. OR 2-2603
Utah, Salt Lake City—Bearings Service & Supply Co., 1207 S. Main St. IN 6-8766
Wash., Aberdeen—Bearing Sales & Service, Inc., 317 E. Market St. AB 5820
Wash., Everett—Bearing Sales & Service, Inc., 2803 Grand Ave. CE 1185
Wash., Longview—Bearing Sales & Service, Inc., 743 Commerce St. HA 5-1850
Wash., Pasco—Bearing Sales & Service, Inc., 319 W. Clark St. LI 7-2421
Wash., Port Angeles—Bearing Sales & Service, Inc., Valley at Second. GL 2-2307
Wash., Seattle—Bearing Sales & Service, Inc., 2908 Sixth Ave. So. MU 0331
Wash., Tacoma—Bearing Sales & Service, Inc., 1743 Jefferson Ave. FU 3-5363

WALWORTH CO., 750 Third Ave.,
New York 17, N. Y.

Valves, Fittings.

Branch Offices

Calif., Los Angeles—2655 So. Eastland Ave. RA 3-6191
Calif., San Francisco—155 Montgomery St. GA 1-3950
Wash., Seattle—814 Securities Bldg. MA 3-0822

WARNER ELECTRIC BRAKE & CLUTCH CO., INDUSTRIAL PRODUCTS DIV., Beloit, Wis.

Electric brakes, clutches and controls (torques from 2 lb. in. to 700 lb. ft.)

Branch Offices

Calif., Pasadena—116 S. Euclid, Suite 101. SY 5-5724. RY 1-7146. 7
Calif., Pleasant Hill—185 Hazel Dr. CL 4-3947

Representatives

Ariz., Phoenix—Semon Bearing & Supply Co., Inc., 325 N. Third Ave. AL 8-7566
Calif., Los Angeles—J. W. Minder Chain & Gear, 6011 S. Central. AD 3-7221
Calif., Modesto—Geiger Iron Works, 124 Willow
Calif., Sacramento—Geiger Iron Works, 14th & S St.
Calif., San Leandro—P. J. Burrill Co., 2131 Washington Ave. SW 8-3165
Calif., Stockton—Geiger Iron Works, 1140 E. Scotts Ave. HO 6-8623
Colo., Denver—Power Transmission, Inc., 4956 Jackson St. DU 8-1681
Ore., Portland—J. W. Minder Chain & Gear, 307 S. E. Hawthorne Blvd. BE 6-1131
Utah, Salt Lake City—C. W. Silver Co., 550 W. Seventh St. So. EL 5-5378

WEATHERHEAD CO., see **FORT WAYNE DIV.**

WEBSTER ELECTRIC CO., 1900 Clark St., Racine, Wis.

Hydraulic pumps, motors and valves.

Representatives

Calif., Los Angeles—Fornaciari Co., 5350 E. Washington Blvd. AN 9-7595
Calif., San Francisco—Calpacific Equipment Co., 50 Hawthorne St. GA 1-0730
Colo., Englewood—Alta Eng. Co., 2950 So. Fox St. EM 6-9642
Ore., Portland—Hydraulic & Air Equipment Co., 2316 N.W. Savier St.
Utah, Salt Lake City—Specialty Sales Co., 117 W. Second So. DA 2-5553
Wash., Seattle—Hydraulic & Air Equipment Co., 2450 Sixth Ave. So.
Wash., Seattle—Paul B. Maurice, 551 E. 56th St.

WELTRONIC CO., 19500 W. Eight Mile Rd., Detroit 19, Mich.

Weltronic fusion welder control, Co-Mo-Trol d-c. motor drive, Digitronic precision controls, Resistance welding controls, Electronics devices.

Branch Office

Calif., Inglewood — 9431 11th Ave., OR 8-1542

WESTERN GEAR CORP., 2600 E. Imperial Highway, Lynwood, Calif. NE 6-2161

Electrical equipment, Gearmotors, Gears (special machinery of all types and sizes), High speed units, Increasers (speed), Motors (air, electric, hydraulic, variable speed), Reducers, speed (bevel gear, helical gear, planetary gear, shaft mounted, spur gear, worm gear), Transformers (rotary), Transmission, variable speed.

See advertisement on page 23

Branch Offices

Calif., Belmont—Quarry and Industrial Rd. LY 3-7611
Calif., Pasadena—132 W. Colorado Blvd. RY 1-6604
Colo., Denver—865 Lincoln St. KE 4-5513
Ore., Portland—930 S.E. Oak St. BE 5-3177

Wash., Seattle—417 9th Ave. So. MA 0062

Representatives

Calif., San Bernardino—Reliable Bearing & Supply, 263 So. E St. TU 8-6565
Colo., Denver—Stearns Roger Mfg. Co., 660 Bannock St. AC 2-8494
Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AM 6-2292
N. Mex., Carlsbad—Carlsbad Supply Co., 501 Park Dr.
Utah, Salt Lake City—Thermal Engineering Co., 1492 Major St. IN 6-8793

WESTERN INSULATED WIRE CO.,
2425 E. 30th, Los Angeles 58, Calif.
LU 7-7103

Portable power cords (Type SO, S, SJ, SJO, brewery, telephone, asbestos), Cable (control, W, G, varnished cambric, asbestos, RR).

Representatives

Calif., San Francisco—Curry Co., 305 King St. YU 2-0788
N. Mex., Albuquerque—John Carder, 1624 No. 1st St. CH 2-3581
Wash., Seattle—J. H. Stumph, 1000 4th Ave. So. MU 5232

WESTINGHOUSE AIR BRAKE CO.,
P. O. Box 36, Wilmerding, Penn.

Air compressors, controls, cylinders, valves.

Branch Offices

Calif., Emeryville—1545 Park Ave. OL 2-8100
Calif., Los Angeles—Pacific Electric Bldg. MI 9719

Representatives

Calif., Los Angeles—Huddleston Equipment Co., 1148 S. Los Angeles St. RI 8-5401
Wyo., Casper—Emrick & Hill Engine & Equip. Co., 1701 E. Yellowstone

WESTINGHOUSE ELECTRIC CORP.,
STURTEVANT DIV. Damon St., Hyde Park, Boston, Mass.

Fans and blowers for forced and induced draft fire power generation.

See advertisement on page 55

Branch Offices

Calif., Los Angeles—600 St. Paul Ave. MA 6-3881
Calif., San Francisco—410 Bush St. EX 2-5353
Wash., Seattle—1318 Fourth Ave. MA 4-8050

Representatives

Ore., Portland—Brod & McClung, 9800 S. E. McBrod Ave. OL 4-5401
Utah, Salt Lake City—Williams, Gritton & Wilde, 204 Dooley Bldg. EM 4-6421

WESTON INSTRUMENTS, a div. of
DAYSTROM, INC., 614 Frelinghuysen Ave., Newark 12, N. J.

Controls (electric), instruments (measuring and testing), Regulators (pressure).

Branch Offices

Calif., Los Angeles—2001 So. Grand Ave. RI 9-2361
Calif., San Francisco—147 Tenth St. UN 3-4250

Representatives

Ariz., Phoenix—J. E. Redmond Supply Co., 625 W. Madison St. AL 4-8471
Colo., Denver—Peterson Co., 4949 Colorado Blvd. DE 3-5434
Wash., Seattle—Elcher & Co., 5 W. Harrison St. AT 4-1811

WHEELER, FOSTER, CORP., 666 Fifth Ave., New York 19, N. Y.

Boilers & boiler equipment, Controls (compressed air, electric, electric motor, hydraulic), Regulators (pressure).

Branch Offices

Calif., Los Angeles—714 W. Olympic Blvd. RI 9-7839
Calif., San Francisco—461 Market St. GA 1-6042
Wash., Seattle—Vance Bldg., Third & Union. MA 2-7434

WHITNEY BLAKE CO., 1565 Dixwell Ave., New Haven 14, Conn.

Electric wire and cable.

Branch Offices

Calif., Los Altos—P.O. Box 1362, WH 8-2122
Calif., Los Angeles—12243 Shetland Lane. GR 6-1011
Wash., Seattle—4041 90th Ave. S.E., Mercer Island. AD 2-8378

Representatives

Ariz., Phoenix—Graybar Electric Co.
Ariz., Tucson—Graybar Electric Co.
Calif., Fresno—Graybar Electric Co.
Calif., Long Beach—Graybar Electric Co.

WHITNEY CHAIN — YEOMANS

Calif., Los Angeles—Gough Industries, Inc., 819 E. First St.
 Calif., Los Angeles—Graybar Electric Co., 210 Anderson St.
 Calif., Oakland—Graybar Electric Co.
 Calif., Sacramento—Graybar Electric Co.
 Calif., San Bernardino—Graybar Electric Co.
 Calif., San Diego—Graybar Electric Co.
 Calif., San Diego—Pacific Wholesale Electric Co., 702 State St.
 Calif., Santa Ana—Graybar Electric Co.
 Ida., Boise—Graybar Electric Co.
 Mont., Butte—Graybar Electric Co.
 Ore., Eugene—Graybar Electric Co.
 Ore., Portland—Graybar Electric Co.
 Ore., Portland—North Coast Electric Co.
 Utah, Salt Lake City—Graybar Electric Co.
 Wash., Seattle—Graybar Electric Co.
 Wash., Seattle—North Coast Electric Co.
 Wash., Spokane—Graybar Electric Co.
 Wash., Tacoma—Graybar Electric Co.

WHITNEY CHAIN CO., 237 Hamilton St., Hartford 2, Conn.

Whitney Tormag magnetic drive (a self-contained, permanent magnet type slip coupling).

Branch Offices

Calif., Huntington Park—5400 Pacific Blvd. LU 7-3151
 Utah, Salt Lake City—1676 E. Forest Hills Dr. CR 7-3520

Representatives

Ariz., Phoenix—Harris Bearing & Supply Co., 729 E. Henshaw Rd.
 Ariz., Prescott—Yavapai Parts & Machine Shop, 143 N. Montezuma
 Ariz., Show Low—Winslow Auto Supply & Mercantile Co.
 Ariz., Tucson—Complete Industrial Supply Co., 530 N. Stone Ave.
 Ariz., Winslow—Winslow Auto Supply & Mercantile Co., 200 W. Second St.
 Ariz., Yuma—Sturges Implement Co., 355 Eighth St.
 Calif., Alturas—Moty & Van Dyke, Inc.
 Calif., Anaheim—Eureka Bearing & Supply Co., 502 S. Los Angeles St.
 Calif., Bakersfield—Ba-Valley Industrial Supply, 131 First St.
 Calif., Blythe—Munson Equipment Co., Inc., 1½ mi. W. Hobson Way, U. S. Hwy. 60-70
 Calif., Brawley—Shank & Kretz Machine & Auto Parts, 141 N. 5th St.
 Calif., Calexico—Baleros Del Valle, S. de R.L., P. O. Box 672
 Calif., Corcoran—Sawtelle & Rosprim, P.O. Box 938
 Calif., Culver City—Aircraft & Industrial Bearings, Inc., 8541 Washington Blvd.
 Calif., Eureka—Bearings & Transmission Products, Inc., 2930 Broadway
 Calif., Fresno—General Bearings Co., P.O. Box 3220
 Calif., Gardena—Brandphant Bearings, Inc., 16508 S. Vermont Ave.
 Calif., Huntington Park—Mechanical Drives Co., 2610 E. 54th St.

Calif., Marysville—Bearing Belt Chain Co., 823 Fifth St.
 Calif., North Sacramento—Industrial Tractor Sales, 903 Del Paso Blvd.
 Calif., Oakland—Bearing Engineering Co., 1019 Harrison St.
 Calif., Patterson—W. C. Filippini Machine Shop, 2nd and I Sts.
 Calif., Pomona—Kelley Supply Co., 254 N. Main St.
 Calif., Redding—Moty & Van Dyke, Inc., Highway 99 So.
 Calif., Riverside—Belt & Equipment Supply Co., 2351 - 8th St.
 Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.
 Calif., San Gabriel—Valley Cities Supply Co., 845 E. Valley Blvd.
 Calif., Santa Clara—Whitney Industrial Drives, 2311 Lafayette St.
 Calif., Stockton—Bearing Supply Co., 300 N. Wilson Way
 Colo., Denver—Western Belting Co., 1720 Wazee St.
 Colo., Grand Junction—Bearing Service Co., 12th & Ute
 Ida., Idaho Falls—Bearings Service & Supply Co. of Idaho, P. O. Box 562
 Ida., Lewiston—Jameson Machine Supply, Inc., 12th & Idaho
 Ida., Twin Falls—Floyd Lilly Co., 130 Third Ave. W.
 Mont., Billings—Bearings Supply Co., Second Ave. N. & 12th St.
 Mont., Butte—Butte Machinery Co., 510 E. Aluminum St.
 Mont., Great Falls—Carl Weissman & Sons, Inc., 300 Third Ave. So.
 Nev., Reno—Styris-Sutton Co., 622 S. Virginia St.
 N. Mex., Albuquerque—Lively Equipment Co., 2601 N. Fourth St.
 N. Mex., Carlsbad—A. D. Gugenheim, Inc., of New Mexico, 201 E. Pierce
 Ore., Bend—Moty & Van Dyke, Inc.
 Ore., Coos Bay—Loggers Supply Co.
 Ore., Eugene—Oregon Supply Co., 250 W. Fourth St.
 Ore., Grants Pass—Redwood Supply Co.
 Ore., John Day—Moty & Van Dyke, Inc.
 Ore., Klamath Falls—Moty & Van Dyke, Inc.
 Ore., Lakeview—Moty & Van Dyke, Inc.
 Ore., Lebanon—Moty & Van Dyke, Inc.
 Ore., Medford—Cal-Ore Machinery Co., 944 S. Central Ave.
 Ore., Prineville—Moty & Van Dyke, Inc.
 Ore., Portland—Northwest Chains & Sprockets, Inc., 31 N. W. First
 Ore., Salem—Mill Supply Corp., 465 S. Church St.
 Ore., Toledo—Toledo Lumber & Supply.
 Utah, Salt Lake City—Bearings Service & Supply Co. of Utah, 1207 S. Main St.
 Wash., Bellingham—Morse Hardware Co., 1025 State St.
 Wash., Chehalis—John A. May Co., 1167 Market St.
 Wash., Everett—Lloyd Co., Hewitt & Rucker Aves.

Wash., Hoquiam—F. G. Foster Co., Inc., P. O. Box 179
 Wash., Olympia—Olympia Supply Co., 625 Columbia St.
 Wash., Raymond—F. G. Foster Co., Inc.
 Wash., Seattle—Northwest Chains & Sprockets, Inc., 3828 E. Marginal Way
 Wash., Spokane—Washington Machinery & Supply Co., W. 9 Cataldo Ave.
 Wash., Tacoma—DuCharme Industrial Transmission Co., 501 E. 34th St.
 Wash., Wenatchee—E. T. Pybus Co.

WILLARD STORAGE BATTERY DIV., 246 E. 131st St., Cleveland 1, Ohio.

Charging equipment, Cable and wire.

Branch Office

Calif., Los Angeles—5700 E. Olympic. RA 3-1121

WORTHINGTON CORP., 401 Worthington Ave., Harrison, N. J.

Air compressors (portable, stationary), Belts, V (rubber), Condensers (barometric, surface stream), Ejectors (steam-jet air), Engines, Feedwater heaters, Gears (bevel, helical, spur, etc.), Generators (electric), Increasers (speed), Pumps, power (horizontal and vertical), Pumps (condensate, boiler feed), Reducers, speed (helical gear), Sheaves, Transmission, variable speed.

Branch Offices

Calif., Los Angeles—5075 Santa Fe Ave. LU 3-6451
 Calif., San Francisco—224 Townsend St. GA 1-4906
 Colo., Denver—1640 Blake St. TA 5-7284
 Ore., Portland—1815 S.E. Seventh Ave. BE 2-1158
 Utah, Salt Lake City—118 Social Hall Ave. EM 4-6591
 Wash., Seattle—2616 Western Ave. MA 4218

WORTHINGTON CORP., see also MASON-NEILAN, a div.

ZIDELL MACHINERY & SUPPLY CO., 3121 S.W. Moody St., Portland 1, Ore. CA 8-8691

* Electric drives (DC, variable speed).

YEOMANS BROS. CO., 1999 N. Ruby St., Melrose Park, Ill.

Pumps, Pneumatic sewage ejectors, Rotary air compressors, Sewage treatment equipment.

Representatives

Ariz., Phoenix—Lee Redman Equipment Co., 610 S. 19th Ave. AL 8-3794
 Calif., Los Angeles—Engineers Sales-Service Co., 1425 S. Atlantic Blvd. AN 1-2181
 Calif., Millbrae—DeLaval Turbine Pacific Co., 201 E. Millbrae Ave. OX 7-4401
 Colo., Denver—Ray Case, 1540 Pueblo Ct. AT 7-6922
 Utah, Salt Lake City—Williams, Gritton & Wilde, 204 Dooly Bldg. EM 4-6421
 Wash., Seattle—H. D. Fowler Co., 901 Lane St. MA 2-6800

CLASSIFIED PRODUCTS SECTION

AIR COMPRESSORS—

portable

American Brake Shoe Co.
 Bellows Co.
 Binks Manufacturing Co.
 Chicago Pneumatic Tool Co.
 Cornelius Co.
 Curtis Manufacturing Co.
 DeVilbiss Co.
 Gardner-Denver Co.
 Ingersoll-Rand Co.
 Joy Manufacturing Co.
 Kahn & Co., Inc.
 Kellogg Div.
 Ledeen Manufacturing Co.
 Lincoln Eng. Co. of Calif.
 M & E Mfg. Co.
 National Seal Div.
 Quincy Compressor Co.
 Roots-Connorsville Blower Div.
 Schramm, Inc.
 Worthington Corp.

Gardner-Denver Co.
 Ingersoll-Rand Co.
 Joy Manufacturing Co.
 Kellogg Div.
 Ledeen Manufacturing Co.
 Lincoln Eng. Co. of Calif.
 M & E Mfg. Co.
 National Seal Div.
 Powers Regulator Co.
 Quincy Compressor Co.
 Roots-Connorsville Blower Div.
 Schramm, Inc.
 Westinghouse Air Brake Co.
 Worthington Corp.
 Yeomans Bros. Co.

AIR CYLINDERS

See CYLINDERS, air

AIR MOTORS

See MOTORS, air

AIR COMPRESSORS—

stationary

Allis-Chalmers Mfg. Co.
 Atlas Copco Pacific, Inc.
 Bellows Co.
 Binks Manufacturing Co.
 Brunner Div.
 Chicago Pneumatic Tool Co.
 Curtis Manufacturing Co.
 DeVilbiss Co.
 Fuller Co.

BASES—motor

Allis-Chalmers Mfg. Co.
 Allis, Louis, Co.
 American Pulley Co.
 General Electric Co.
 Apparatus Sales Div.
 Imperial Electric Co.
 Lovejoy Flexible Coupling Co.
 Minder, J. W., Chain & Gear Co.
 Reeves Pulley Co. Div.

BATTERIES

Burgess Battery Co.
 C & D Batteries, Inc.
 Delco-Remy Div.
 Exide Industrial Div.
 National Carbon Co.
 Willard Storage Battery Div.

BEARINGS—babbitted

American Brake Shoe Co.
 Bunting Brass & Bronze Co.
 Continental Gin Co.
 Dick, R & J, Co., Inc.
 Dodge Manufacturing Corp.
 Electro-Nite Carbon Co.
 Forth Worth Steel & Machinery Co.
 Link-Belt Co.
 Minder, J. W., Chain & Gear Co.

BEARINGS—ball

Boston Gear Works
 Continental Gin Co.
 Dick, R. J., Co., Inc.
 Dodge Manufacturing Corp.
 Electro-Nite Carbon Co.
 Fafnir Bearing Co.
 Fort Worth Steel & Machinery Co.
 Hartford Steel Ball Co., Inc.
 Link-Belt Co.
 Marlin-Rockwell Corp.
 Minder, J. W., Chain & Gear Co.

Miniature Precision Bearings, Inc.

New Departure Div.
 Nice Ball Bearing Co.
 Pic Design Corp.
 S K F Industries, Inc.
 Split Ball Bearing Corp.
 Stephens-Adamson Mfg. Co.
 Thompson Industries, Inc.
 (linear)
 Torrington Co.

BEARINGS—roller

Chain Belt Co.
 Continental Gin Co.
 Cooper Split Roller Bearing Corp.
 Dodge Manufacturing Corp.
 Hyatt Bearings Div.
 Link-Belt Co.
 Marlin-Rockwell Corp.
 Minder, J. W., Chain & Gear Co.
 Rollway Bearing Co., Inc.
 S K F Industries, Inc.
 Shafer Bearing Div.
 Timken Roller Bearing Co.
 Torrington Co.

BEARINGS—sleeve

Aluminum Co. of America
 American Brake Shoe Co.
 Boston Gear Works
 Bunting Brass and Bronze Co.
 Continental Gin Co.
 Dodge Manufacturing Corp.
 Electro-Nite Carbon Co.

Kingwell Bros., Ltd.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morganite, Inc.

BELTING, DRIVE—

chain or link

Associated Gear & Machine Co.
Atlas Chain & Mfg. Co.
Brammer Corp.
Cook, H. N., Belting Co.
Dick, R. & J., Co., Inc.
Link-Belt Co.
Union Chain & Mfg. Co.

BELTING, DRIVE—

composition

Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
Dick, R. & J., Co., Inc.
Extremultus, Inc.
Minder, J. W., Chain & Gear Co.
Raybestos-Manhattan, Inc.
Russell Mfg. Co.
Ton-Tex Corp.
Victor Balata & Textile Belting Co.

BELTING, DRIVE—leather

Bond, Charles, Co.
Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
Graton & Knight Co.
E. F. Houghton & Co.
Minder, J. W., Chain & Gear Co.
Rhoads, J. E., & Sons
Russell Mfg. Co.
Ton-Tex Corp.

BELTING, DRIVE—rubber

American Pulley Co.
Congress Drives Div.
Cook, H. N., Belting Co.
Dayton Rubber Co.
Degen, L. P., Belting Co.
Gerbing Mfg. Corp.
B. F. Goodrich Industrial Products Co.
Goodyear Tire & Rubber Co.
Hewitt-Robins, Inc.
Link-Belt Co.
Lovejoy Flexible Coupling Co.
Minder, J. W., Chain & Gear Co.
Pie Design Corp.
Quaker Pioneer Rubber Div.
Raybestos-Manhattan, Inc.
Russell Manufacturing Co.
Thermoid Co.
Ton-Tex Corp.
U. S. Rubber Co.

BELT LACING

See LACING, belt

BELTS—timing

Associated Gear & Machine Co.
Dick, R. & J., Co., Inc.
Goodyear Tire & Rubber Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Rhoads, J. E., & Sons
Russell Mfg. Co.
United States Rubber Co.

BELTS, V—composition

American Pulley Co.
Associated Gear & Machine Co.
Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
Minder, J. W., Chain & Gear Co.
Raybestos-Manhattan, Inc.
Ton-Tex Corp.
Worthington Corp.

BELTS, V—leather

Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
Graton & Knight Co.
Minder, J. W., Chain & Gear Co.
Rhoads, J. E., & Sons
Ton-Tex Corp.
Worthington Corp.

BELTS, V—rubber

Allis-Chalmers Mfg. Co.
American Pulley Co.
Cook, H. N., Belting Co.

Degen, L. P., Belting Co.
Dick, R. & J., Co., Inc.
Dodge Manufacturing Corp.
Durkee-Atwood Co.
Gerbing Mfg. Corp.
Goodall Rubber Co.
The B. F. Goodrich Co.
Goodyear Tire & Rubber Co.
Link-Belt Co.
Manheim Mfg. & Belting Co.
Minder, J. W., Chain & Gear Co.
Quaker Pioneer Rubber Div.
Raybestos-Manhattan, Inc.
Thermoid Co.
United States Rubber Co.
Worthington Corp.

BOILERS & BOILER

EQUIPMENT

Ames Iron Works, Inc.
Babcock & Wilcox Co.
Bros., Inc.
Clayton Manufacturing Co.
Cleaver-Brooks Co.
Combustion Engineering, Inc.
Detroit Stoker Co.
Johnson Corp.
E. Keeler Co.
Lunkeneheimer Co.
Madden Corp.
Malsbary Mfg. Co.
Manning, Maxwell & Moore, Inc.
McDonnell & Miller, Inc.
(equipment only)
Orr & Sembower, Inc.
Parker, Sid E., Boiler Mfg. Co., Inc.
Republic Steel Corp.
Wheeler, Foster, Corp.

BUS DUCTS

See DUCTS

CABLE

See WIRE & CABLE

CHAINS FOR DRIVES—

detachable link

Acme Chain Corp.
Associated Gear & Machine Co.
Chain Belt Co.
Cullman Wheel Co.
Diamond Chain Co., Inc.
Jeffrey Mfg. Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.

CHAINS FOR DRIVES—

roller

Acme Chain Corp.
Associated Gear & Machine Co.
Atlas Chain & Mfg. Co.
Boston Gear Works
Chain Belt Co.
Cook, H. N., Belting Co.
Cullman Wheel Co.
Diamond Chain Co., Inc.
Dick, R. & J., Co., Inc.
Dodge Manufacturing Corp.
Jeffrey Mfg. Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Ohio Gear Co.
Union Chain & Mfg. Co.
Whitney Chain Co.

CHAINS FOR DRIVES—

silent transmission

Acme Chain Corp.
Cullman Wheel Co.
Link-Belt Co.
Morse Chain Co.
Minder, J. W., Chain & Gear Co.
Union Chain & Mfg. Co.

CHAINS FOR DRIVES—

other

Cullman Wheel Co.
Minder, J. W., Chain & Gear Co.
Union Chain & Mfg. Co.
(conveying)
Whitney Chain Co.

CIRCUIT BREAKERS

Adam, Frank, Electric Co.
Allis-Chalmers Mfg. Co.
Appleton Electric Co.
Bulldog Electric Products Co.
Cutler-Hammer, Inc.
Federal Pacific Electric Co.
General Electric Co.
Apparatus Sales Div.
General Electric Co.,
Circuit Protective Devices Dept.
I-T-E Circuit Breaker Co.
Lear, Inc.
Sangamo Electric Co.
Spencer Div.
Square D Co.
Wadsworth Electric Mfg. Co., Inc.
Worthington Corp.

CLUTCHES

Chain Belt Co.
Continental Gin Co.
Continental Sales & Service Co.
Cutler-Hammer, Inc.
Dodge Manufacturing Corp.
Flaton Machine Works, Inc.
Formsprag Co.
General Motors Corp.,
New Departure Div.
Hilliard Corp.
I-T-E Circuit Breaker Co.
Jeffrey Mfg. Co.
Lear, Inc.
Ledeon Manufacturing Co.
Link-Belt Co.
Mercury Clutch Div.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Rockford Clutch Div.
Salsbury Corp.
Thermoid Co. (facing)
Twin Disc Clutch Co.
V-Belt Clutch Co.
Warner Electric Brake & Clutch Co.

COLLARS—shaft

American Pulley Co.
Associated Gear & Machine Co.
Easton Gear Works
Chain Belt Co.
Congress Drives Div.
Dick, R. & J., Co., Inc.
Dodge Manufacturing Corp.
Fort Worth Steel & Machinery Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Standard Pressed Steel Co.

COMPRESSORS

See AIR COMPRESSORS

CONDUITS & FITTINGS—

electric

Aluminum Co. of America
American Metal Hose Div.
Appleton Electric Co.
Buchanan Electrical Products Corp.
Electrix Terminals & Connectors, Inc.
Elico Prod., Inc.
Gedney Electric Co.
Johns-Manville Corp.
Kearney, James R., Corp.
(fittings only)
Orangeburg Mfg. Co., Inc.
Republic Steel Corp.
Rome Cable Corp.
Spang-Chalfant Div.
Triangle Conduit & Cable Co., Inc.

CONTROL CENTERS

Allen-Bradley Co.
Allis-Chalmers Mfg. Co.
Bailey Meter Co.
Barber-Colman Co.
Bogue Electric Mfg. Co.
Bristol Co.
B/W Controller Corp.
Clark Controller Co.
Cleveland Fuel Equipment Co.
Cutler-Hammer, Inc.
Federal Pacific Electric Co.
General Electric Co.
Apparatus Sales Div.
Kahn & Co., Inc.
Leeds & Northrup Co.

BELTING—CONTROLS

Powers Regulator Co.
Rucker Co.
Square D Co.

CONTROLS—

compressed air

Bailey Meter Co.
Barksdale Valves
Bellows Co.
Bristol Co.
Clary Dynamics
Federal Pacific Electric Co.
Fischer & Porter Co.
Furnas Electric Co.
Hagan Chemicals & Controls, Inc.
Hanna Engineering Works
Kurz & Root Co.
Lear, Inc.
Ledeon Manufacturing Co.
Leslie Co.
Logansport Machine Co., Inc.
Mechanical Air Controls, Inc.
Mercoid Corp.
Numatics, Inc.
OPW-Jordan
Powers Regulator Co.
Ross Operating Valve Co.
Rucker Co.
Schrader's, A., Son
Square D Co.
Westinghouse Air Brake Co.
Wheeler, Foster, Corp.
Worthington Corp.
Versa Products Co., Inc.

CONTROLS—electric

Adam, Frank, Electric Co.
Allen-Bradley Co.
Allis-Chalmers Mfg. Co.
American Rectifier Corp.
Automatic Switch Co.
Barber-Colman Co.
Beckman Instruments, Inc.
Bogue Electric Mfg. Co.
Bristol Co.
B/W Controller Corp.
Clark Controller Co.
Clary Dynamics
Cleveland Fuel Equipment Co.
Cutler-Hammer, Inc.
EC&M Div.
Federal Pacific Electric Co.
Fischer & Porter Co.
Furnas Electric Co.
General Electric Co.
Apparatus Sales Div.
Hagan Chemicals & Controls, Inc.
Hanna Engineering Works
Johnson Corp.
Kurz & Root Co.
Lear, Inc.
McDonnell & Miller, Inc.
Mercoid Corp.
Minder, J. W., Chain & Gear Co.
Republic Electric & Development Co.
Spencer Div.
Square D Co.
Warner Electric Brake & Clutch Co.
Weston Instruments
Wheeler, Foster Corp.
Worthington Corp.

CONTROLS—electric motor

Adam, Frank, Electric Co.
Allen-Bradley Co.
Allis, Louis, Co.
Allis-Chalmers Mfg. Co.
American Rectifier Corp.
Bogue Electric Mfg. Co.
Bristol Co.
B/W Controller Corp.
Clark Controller Co.
Clary Dynamics
Cutler-Hammer, Inc.
Dillon, W. C., & Co., Inc.
EC&M Div.
Electric Machinery Mfg. Co.
Federal Pacific Electric Co.
Fischer & Porter Co.
Furnas Electric Co.
General Electric Co.
Apparatus Sales Div.
Hagan Chemicals & Controls, Inc.
Hanna Engineering Works
Hoover Electric Co.
Kurz & Root Co.
Lear, Inc.
Minder, J. W., Chain & Gear Co.
Reliance Electric & Engineering Co.
Republic Electric & Development Co.
Square D Co.
Wheeler, Foster Corp.
Worthington Corp.

CONTROLS — HOSE

CONTROLS—hydraulic

Adel Precision Products
American Brake Shoe Co.
Automatic Switch Co.
Barksdale Valves
Bogue Electric Mfg. Co.
Bristol Co.
Brown & Sharpe Mfg. Co.
Clary Dynamics
Denison Engineering Co.
Dukes Co., Inc.
Federal Pacific Electric Co.
Fischer & Porter Co.
Furnas Electric Co.
Hagan Chemicals & Controls, Inc.
Hanna Engineering Works
Hydraulic Press Mfg. Co.
Lear, Inc.
Ledeen Manufacturing Co.
Logansport Machine Co., Inc.
Minder, J. W., Chain & Gear Co.
The New York Air Brake Co., Kalamazoo Div.
Numatics, Inc.
Oilgear Co.
Ross Operating Valve Co.
Rucker Co.
Sperry Products, Inc.
Square D Co.
Unit Mfg. Co.
Versa Products Co., Inc.
Wheeler, Foster Corp.
Worthington Corp.

COUPLINGS—

air and hydraulic

See FITTINGS & COUPLINGS

COUPLINGS—shaft

Ajax Flexible Coupling Co., Inc.
Associated Gear & Machine Co.
Bond, Charles, Co.
Boston Gear Works
Chain Belt Co.
Congress Drives Div.
Continental Gin Co.
Cullman Wheel Co.
Diamond Chain Co., Inc.
Dick Co., R. & J., Inc.
Dodge Manufacturing Corp.
Falk Corp.
Flaton Machine Works, Inc.
Foote Bros. Gear & Machine Corp.
Fort Worth Steel & Machinery Co.
Gerbing Manufacturing Corp.
Graton & Knight Co.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Ledeen Manufacturing Co.
Link-Belt Co.
Lord Manufacturing Co.
Lorjoy Flexible Coupling Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Philadelphia Gear Corp.
Pic Design Corp.
Thomas Flexible Coupling Co.
Waldron, John, Corp.

CYLINDERS—air

Airmatic Valve, Inc.
Bailey Meter Co.
Bellows Co.
Bimba Hardware & Manufacturing Co.
Bruning Co.
Carter Controls, Inc.
Clary Dynamics
Curtis Manufacturing Co.
Densmore Engineering Co., Inc.
Electro-Mechano Co.
Galland-Henning Nopak Div.
Hagan Chemicals & Controls, Inc.
Hanna Engineering Works
Hannifin Co.
Hydraulic Press Mfg. Co.
Hydro-Line Mfg. Co.
Ledeen Manufacturing Co.
Lindberg Air & Hydraulic Div.
Miller Fluid Power Div.
Modernair Corp.
Ortman-Miller Machine Co., Inc.
Remco Mfg. Co.
Rivett Lathe & Grinder, Inc.
Rucker Co.
Schrader's, A. Son
S-P Manufacturing Corp.
Turlock Iron & Machine Works
Westinghouse Air Brake Co., Industrial Products Div.
Unit Mfg. Co.

CYLINDERS—hydraulic

Airmatic Valve, Inc.
Bruning Co.
Carter Controls, Inc.
Cascade Manufacturing Co.
Clary Dynamics
Commercial Shearing & Stamp-
ing Co.
Denison Engineering Co.
Densmore Engineering Co., Inc.
Dukes Co., Inc.
Galland-Henning Nopak Div.
Hagan Chemicals & Controls, Inc.
Hanna Engineering Works
Hannifin Co.
Hydraulic Press Mfg. Co.
Hydro-Line Mfg. Co.
Ledeen Manufacturing Co.
Lindberg Air & Hydraulic Div.
Miller Fluid Power Div.
Modernair Corp.
The New York Air Brake Co., Kalamazoo Div.
Oilgear Co.
Ortman-Miller Machine Co., Inc.
Remco Manufacturing Co.
Rivett Lathe & Grinder, Inc.
Rucker Co.
S-P Manufacturing Corp.
Turlock Iron & Machine Works
Unit Mfg. Co.

DRIVES, VARIABLE SPEED

See TRANSMISSION, variable speed, & MOTORS, variable speed

DUCTS—bus and wiring

Adam, Frank, Electric Co.
American Metal Hose Div.
Bulldog Electric Products Co. (bus only)
Delta-Star Electric Div.
Federal Pacific Electric Co.
Feedrail Corp.
I-T-E Circuit Breaker Co.
Panduit Co.
Spang-Chalfant Div.
Wadsworth Electric Mfg. Co., Inc. (wiring troughs)

ELECTRIC MOTORS

See MOTORS, electric

ENGINES

Allis-Chalmers Mfg. Co.
Atlas Copco Pacific, Inc.
Chicago Pneumatic Tool Co.
Continental Sales & Service Co.
Detroit Diesel Engine Div.
Enterprise Engine & Machinery Co.
Fairbanks, Morse & Co. (gas, diesel)
Hercules Motors Corp.
Ingersoll-Rand Co. (diesel & gas)
National Seal Div.
Onan, D. W., & Sons, Inc.
Worthington Corp.

FITTINGS & COUPLINGS—

air

Aeroquip Corp.
Bruning Co.
Chicago Pneumatic Tool Co.
Chiksan Co.
Degen, L. P., Belting Co.
Flexonics Corp.
Fort Wayne Div.
Gates Rubber Co.
Hansen Mfg. Co.
L & L Manufacturing Co.
Lenz Co.
Parker Fittings & Hose Div.
Schrader's, A. Son
Walworth Co.
W-S Fittings Div.

FITTINGS & COUPLINGS—

hydraulic

Aeroquip Corp.
American Brake Shoe Co.
Bruning Co.
Chiksan Co.
Degen, L. P., Belting Co.
Dukes Co., Inc.
Eastman Mfg. Co.
Flexonics Corp.
Fort Wayne Div.
Gates Rubber Co.
Hansen Mfg. Co.

Imperial Brass Mfg. Co.
L & L Manufacturing Co.
Ladish Co.
Lenz Co.
Parker Fittings & Hose Div.
Snap-Tite, Inc.
Walworth Co.
W-S Fittings Div.

FLAT BELTS

See BELTING, DRIVE

FLUID DRIVES

Brown & Sharpe Mfg. Co.
Denison Eng. Co.
Dodge Manufacturing Corp.
Imperial Electric Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
National Seal Div.
Twin Disc Clutch Co.

FUSES

Bussmann Manufacturing Div.
Chance, A. B., Co.
Economy Fuse & Mfg. Co.
Kearney, James R., Corp.
S & C Electric Co.

GEARMOTORS

Allis-Chalmers Mfg. Co.
Allis, Louis, Co.
Boston Gear Works
Bogue Electric Mfg. Co.
Continental Gin Co.
Diehl Mfg. Co.
Electra Motors, Inc.
Falk Corp.
Foote Bros. Gear & Machine Corp.
General Electric Co., Apparatus Sales Div.
General Motors Corp.
Belco Products Div.
Imperial Electric Co.
Lear, Inc.
Lima Electric Motor Co., Inc.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
National Seal Div.
Ohio Gear Co.
Philadelphia Gear Corp.
Smith, A. O., Corp.
Sterling Electric Motors, Inc.
U. S. Electrical Motors, Inc.
Western Gear Corp.
Worthington Corp.

GEARS—bevel, helical,

spur, etc.

American Stock Gear Div.
Amplex Div.
Associated Gear & Machine Co.
Bond, Charles Co.
Boston Gear Works
Continental Gin Co.
Falk Corp. (helical only)
Foote Bros. Gear & Machine Corp.
Flaton Machine Works, Inc.
Gear Engineering & Mfg. Co., Inc.
General Electric Co., Apparatus Sales Div.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Johnson Gear & Mfg. Co., Ltd.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Ohio Gear Co.
Philadelphia Gear Corp.
Pic Design Corp.
Turlock Iron & Machine Works
Western Gear Corp.

GEARS—worm

Allis, Louis, Co.
American Stock Gear Div.
Associated Gear & Machine Co.
Bond, Charles Co.
Boston Gear Works
Cleveland Worm & Gear Co.
Continental Gin Co.
Flaton Machine Works, Inc.
Foote Bros. Gear & Machine Corp.
Gear Engineering & Mfg. Co., Inc.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Johnson Gear & Mfg. Co., Ltd.

Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Ohio Gear Co.
Philadelphia Gear Corp.
Pic Design Corp.
Sterling Electric Motors, Inc.
Turlock Iron & Machine Works
Western Gear Corp.

GENERATORS—electric

Allis-Chalmers Mfg. Co.
Allis, Louis, Co.
Bogue Electric Mfg. Co.
Delco-Remy Div.
Electric Machinery Mfg. Co.
Enterprise Engine & Machinery Co.
Fairbanks, Morse & Co. (gasoline, diesel)
General Electric Co.
Apparatus Sales Div.
General Motors Corp.
Delco Products Div.
Hoover Electric Co.
Howard Industries, Inc.
Imperial Electric Co.
Kurtz & Root Co.
Leland Electric Co. Div.
Onan, D. W., & Sons, Inc.
Reliance Electric & Engineering Co.
Republic Electric & Development Co.
Robbins & Myers, Inc.
Thor Power Tool Co.
Worthington Corp.

HANGERS—shaft

Associated Gear & Machine Co.
Boston Gear Works
Continental Gin Co.
Dodge Mfg. Corp.
Fort Worth Steel & Machinery Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Pic Design Corp.

HOSE—air

Aeroquip Corp.
American Metal Hose Div.
Atlas Copco Pacific, Inc.
Bellows Co.
Binks Manufacturing Co.
Chicago Pneumatic Tool Co.
Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
DeVilbiss Co.
Flexonics Corp.
Fort Wayne Div.
Goodall Rubber Co.
The B. F. Goodrich Co.
Goodyear Tire & Rubber Co.
Hewitt-Robins, Inc.
Imperial Brass Mfg. Co.
Johnson Metal Hose, Inc.
Lenz Co.
M&E Mfg. Co.
Parker Fittings & Hose Div.
Quaker Pioneer Rubber Div.
Raybestos-Manhattan, Inc.
Resistoflex Corp.
Schrader's, A. Son
Thermold Co.
Thor Power Tool Co.
United States Rubber Co.

HOSE—flexible metallic

Aeroquip Corp.
Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
Flexonics Corp.
Goodall Rubber Co.
Johnson Metal Hose, Inc.
Raybestos-Manhattan, Inc.
Resistoflex Corp.
U. S. Rubber Co.
Universal Metal Hose Co.

HOSE—hydraulic

Aeroquip Corp.
Bruning Co.
Cook, H. N., Belting Co.
Degen, L. P., Belting Co.
Eastman Mfg. Co.
Flexonics Corp.
Fort Wayne Div.
The B. F. Goodrich Co.
Goodyear Tire & Rubber Co.
Hewitt-Robins, Inc.

Imperial Brass Mfg. Co.
Johnson Metal Hose, Inc.
Lenz Co.
Parker Fittings & Hose Div.
Quaker Pioneer Rubber Div.
Raybestos-Manhattan, Inc.
Resistoflex Corp.
Thermoid Co.
United States Rubber Co.

HYDRAULIC CYLINDERS

See CYLINDERS, hydraulic

HYDRAULIC MOTORS

See MOTORS, hydraulic

INCREASERS—speed

Associated Gear & Machine Co.
Falk Corp.
Hewitt-Robins, Inc.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Ohio Gear Co.
Turlock Iron & Machine Works
Western Gear Corp.
Worthington Corp.

INSTRUMENTS—

measuring and testing

Alectric Mfg. Co.
Automatic Timing & Controls, Inc.
Bailey Meter Co.
Barber-Colman Co.
Beckman Instruments, Inc.
Bristol Co.
Brown & Sharpe Mfg. Co.
Cleveland Fuel Equipment Co.
Electro-Mechano Co.
Fafnir Bearing Co.
Federal Pacific Electric Co.
Foxboro Co.
General Electric Co.
Apparatus Sales Div.
Hagan Chemicals & Controls, Inc.
Kahn & Co., Inc.
Leeds & Northrup Co.
Lear, Inc.
Manning, Maxwell & Moore, Inc.
Miljan, Inc.
Sangamo Electric Co.
Sperry Products, Inc.
United States Gauge Div.
Weston Instrument

LACING—belt

Clipper Belt Lacer Co.
Degen, L. F., Belting Co.
Dick, R. & S., Co., Inc.
Graton & Knight Co.
Minder, J. W., Chain & Gear Co.
Rhoads, J. E., & Sons
Ton-Tex Corp.

LOAD CENTERS

Adam, Frank, Electric Co.
Bulldog Electric Co.
Cutler-Hammer, Inc.
General Electric Co., Apparatus Sales Div.
General Electric Co., Circuit Protective Devices Dept.
I-T-E Circuit Breaker Co.
Moloney Electric Co.
Square D Co.
Wadsworth Elec. Mfg. Co., Inc.

MOTOR BASES

See BASES, MOTOR

MOTOR CONTROLS

See CONTROLS, electric, motor

MOTORS—air

Bellows Co.
Chicago Pneumatic Tool Co.
Gardner-Denver Co.
Ingersoll-Rand Co.
Joy Manufacturing Co.
Kurz & Root Co.
Lear, Inc.
M&E Mfg. Co.

Thor Power Tool Co.
Western Gear Corp.
Worthington Corp.

MOTORS—electric, DC

Allis-Chalmers Mfg. Co.
Allis, Louis, Co.
Baldor Electric Co.
Bodine Electric Co.
Bogue Electric Mfg. Co.
Continental Electrical Co., Inc.
Delco-Remy Div.
Fairbanks, Morse & Co.
General Electric Co., Apparatus Sales Div.
Hoover Electric Co.
Howard Industries, Inc.
Imperial Electric Co.
Kurz & Root Co.
Lear, Inc.
Leland Electric Co. Div.
Minder, J. W., Chain & Gear Co.
Peerless Electric Co.
Reliance Electric & Engineering Co.
Republic Electric & Development Co.
Robbins & Myers, Inc.
Worthington Corp.
Zidell Machinery & Supply Co.

MOTORS—electric,

poly-phase, AC

Allis-Chalmers Mfg. Co.
Allis, Louis, Co.
Baldor Electric Co.
Bodine Electric Co.
Bogue Electric Mfg. Co.
Continental Electrical Co., Inc.
Diehl Manufacturing Co.
Doerr Electric Corp.
Electric Machinery Mfg. Co.
Fairbanks, Morse & Co.
Franklin Electric Co., Inc.
General Electric Co., Apparatus Sales Div.
Imperial Electric Co.
Kurz & Root Co.
Lear, Inc.
Leland Electric Co. Div.
Lima Electric Motor Co., Inc.
Minder, J. W., Chain & Gear Co.
Peerless Electric Co.
Reliance Electric & Engineering Co.
Republic Electrical & Development Co.
Robbins & Myers, Inc.
Smith, A. O., Corp.
Sterling Electric Motors, Inc.
U. S. Electrical Motors, Inc.
Wagner Electric Corp.
Worthington Corp.
Zidell Machinery & Supply Co.

MOTORS—electric,

single-phase, AC

Allis, Louis, Co.
Baldor Electric Co.
Bodine Electric Co.
Bogue Electric Mfg. Co.
Diehl Manufacturing Co.
Doerr Electric Corp.
Electra Motors, Inc.
Franklin Electric Co., Inc.
General Electric Co., Apparatus Sales Div.
Howard Industries, Inc.
Imperial Electric Co.
Kurz & Root Co.
Lear, Inc.
Leland Electric Co. Div.
Minder, J. W., Chain & Gear Co.
Peerless Electric Co.
Robbins & Myers, Inc.
Smith, A. O., Corp.
Sterling Electric Motors, Inc.
Thor Power Tool Co.
U. S. Electrical Motors, Inc.
Wagner Electric Corp.
Worthington Corp.
Zidell Machinery & Supply Co.

MOTORS, GEAR

See GEARMOTORS

MOTORS—hydraulic

Adel Precision Products
American Brake Shoe Co.
Bogue Electric Mfg. Co.
Brown & Sharpe Mfg. Co.
Commercial Shearing & Stamp-
ing Co.

Dennison Engineering Co.
Hydraulic Press Mfg. Co.
Imperial Electric Co.
Lear, Inc.
National Seal Div.
The New York Air Brake Co.,
Kalamazoo Div.
Oilgear Co.
Western Gear Corp.
Worthington Corp.

MOTORS—variable speed

Allis, Louis, Co.
Bodine Electric Co.
Bogue Electric Mfg. Co.
Doerr Electric Corp.
Fairbanks, Morse & Co.
General Electric Co., Apparatus Sales Div.
Lear, Inc.
Leland Electric Co. Div.
Lima Electric Motor Co., Inc.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
National Seal Div.
Reliance Electric & Engineering Co.
Republic Electric & Development Co.
Sterling Electric Motors, Inc.
Western Gear Corp.
Worthington Corp.
Zidell Machinery & Supply Co.

PANELBOARDS—electric

Adam, Frank, Electric Co.
Allis, Louis, Co.
Appleton Electric Co.
Bailey Meter Co.
Bogue Electric Mfg. Co.
Bulldog Electric Products Co.
Cleveland Fuel Equipment Co.
Cutler-Hammer, Inc.
Federal Pacific Electric Co.
Fuller Co.
General Electric Co., Apparatus Sales Div.
Hoffman Engineering Corp.
I-T-E Circuit Breaker Co.
Johns-Manville Corp.
Kahn & Co., Inc.
Leeds & Northrup Co.
Ross, J. O., Engineering
Square D Co.
Wadsworth Electric Mfg. Co., Inc.
Worthington Corp.

PILLOW BLOCKS

American Brake Shoe Co.
Associated Gear & Machine Co.
Boston Gear Works
Chain Belt Co.
Congress Drives Div.
Continental Gin Co.
Dick, R. & J., Co., Inc.
Dodge Manufacturing Corp.
Electro-Nite Carbon Co.
Fafnir Bearing Co.
General Motors Corp., New Departure Div.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Link-Belt Co.
Marlin-Rockwell Corp.
Minder, J. W., Chain & Gear Co.
S K F Industries, Inc.
Shafer Bearing Div.
Stephens-Adamson Mfg. Co.

PINIONS

See GEARS

PRESSURE REGULATORS

See REGULATORS, pressure

PULLEYS

Allis-Chalmers Mfg. Co.
American Brake Shoe Co.
American Pulley Co.
Associated Gear & Machine Co.
Congress Drives Div.
Continental Gin Co.
Cook, H. N., Belting Co.
Degen, L. F., Belting Co.
Dick, R. & J., Co., Inc.
Dings Magnetic Separator Co.
Dodge Manufacturing Corp.
Fafnir Bearing Co.
Flaton Machine Works, Inc.
Fort Worth Steel & Machinery Co.
Gerbing Manufacturing Corp.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Link-Belt Co.
Lovejoy Flexible Coupling Co.

PUMPS—SWITCHES

Minder, J. W., Chain & Gear Co.
Pic Design Corp.
Reeves Pulley Co. Div.
Stephens-Adamson Mfg. Co.
Tee Co.

PUMPS—hydraulic power

Adel Precision Products
American Brake Shoe Co.
Atlas Copco Pacific, Inc.
Brown & Sharpe Mfg. Co.
Commercial Shearing & Stamp-
ing Co.
Denison Engineering Co.
Fairbanks, Morse & Co.
Gardner-Denver Co.
Hydraulic Press Mfg. Co.
National Seal Div.
Oilgear Co.
Rucker Co.
Tuthill Pump Co.
Unit Mfg. Co.
Webster Electric Co.
Worthington Corp.
Yeomans Bros. Co.

RECTIFIERS

Allis-Chalmers Mfg. Co.
American Rectifier Corp.
Bogue Electric Mfg. Co.
Christie Electric Corp.
Electro Products Laboratories,
Inc.
General Electric Co.,
Apparatus Sales Div.
I-T-E Circuit Breaker Co.

REDUCERS, SPEED—

bevel gear

Allis, Louis, Co.
Continental Gin Co.
Falk Corp.
Foote Bros. Gear & Machine
Corp.
Hewitt-Robins, Inc.
Johnson Gear & Mfg. Co., Ltd.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
National Seal Div.
Philadelphia Gear Corp.
Reliance Electric & Engineering
Co.
Tulsa Winch Div.
Western Gear Corp.
Worthington Corp.

REDUCERS, SPEED—

helical gear

Allis, Louis, Co.
Boston Gear Works
Continental Gin Co.
Dodge Mfg. Corp.
Electra Motors, Inc.
Falk Corp.
Foote Bros. Gear & Machine
Corp.
General Electric Co.,
Apparatus Sales Div.
Hewitt-Robins, Inc.
Ledeon Manufacturing Co.
Lima Electric Motor Co., Inc.
Link-Belt Co.
Lovejoy Flexible Coupling Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Stephens-Adamson Mfg. Co.
Sterling Electric Motors, Inc.
Philadelphia Gear Corp.
Reliance Electric & Engineering
Co.
Tulsa Winch Div.
Turlock Iron & Machine Works
Western Gear Corp.
Worthington Corp.

REDUCERS, SPEED—

planetary gear

Continental Gin Co.
Foote Bros. Gear & Machine
Corp.
General Electric Co.,
Apparatus Sales Div.
Hart Reduction Pulley Co.
Minder, J. W., Chain & Gear Co.
Philadelphia Gear Corp.
Sterling Electric Motors, Inc.
Tulsa Winch Div.
Turlock Iron & Machine Works
Western Gear Corp.
Worthington Corp.

REDUCERS, SPEED—

shaft mounted

American Pulley Co.
Boston Gear Works
Continental Gin Co.
Dodge Manufacturing Corp.
Electra Motors, Inc.
Falk Corp.
Foote Bros. Gear & Machine
Corp.
General Electric Co.,
Apparatus Sales Div.
Hart Reduction Pulley Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Philadelphia Gear Corp.
Stephens-Adamson Mfg. Co.
Sterling Electric Motors, Inc.
Tulsa Winch Div.
Turlock Iron & Machine Works
Western Gear Corp.
Worthington Corp.

REDUCERS, SPEED—spur

gear

Continental Gin Co.
Foote Bros. Gear & Machine
Corp.
Hewitt-Robins, Inc.
Lima Electric Motor Co., Inc.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Philadelphia Gear Corp.
Pic Design Corp.
Tulsa Winch Div.
Turlock Iron & Machine Works
Western Gear Corp.
Worthington Corp.

REDUCERS, SPEED—worm

gear

Allis, Louis, Co.
American Stock Gear Div.
Bond, Charles, Co.
Boston Gear Works
Cleveland Worm & Gear Co.
Continental Gin Co.
Electra Motors, Inc.
Foote Bros. Gear & Machine
Corp.
General Electric Co.,
Apparatus Sales Div.
Hewitt-Robins, Inc.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Philadelphia Gear Corp.
Pic Design Corp.
Reliance Electric & Engineering
Co.
Republic Electric &
Development Co.
Sterling Electric Motors, Inc.
Tulsa Winch Div.
Turlock Iron & Machine Works
Western Gear Corp.
Worthington Corp.

REGULATORS—pressure

Airmatic Valve, Inc.
Bellows Co.
Binks Manufacturing Co.
Clary Dynamics
Copes-Vulcan Div.
Cutler-Hammer, Inc.
DeVilbiss Co.
Fischer & Porter Co.
Fisher Governor Co.
Fulton Syphon Div.
Hagan Chemical & Controls, Inc.
Hannifin Co. (air line)
Ledeon Manufacturing Co.
Leslie Co.
M-B Products, Inc.
Manning, Maxwell & Moore, Inc.
Norgren, C. A., Co.
Powers Regulator Co.
Sarco Co., Inc.
Schrader's, A. Son
Square D Co.
Weston Instruments
Wheeler, Foster, Corp.

ROLLER CHAIN

See CHAINS FOR DRIVES

SHEAVES

Allis-Chalmers Mfg. Co.
American Brake Shoe Co.
Amplex Div.
Cook, H. N., Belting Co.
Dick, R. & J., Co., Inc.
Degen, L. P., Belting Co.

Dodge Manufacturing Corp.
Durkee-Atwood Co.
Electra-Nite Carbon Co.
Flaton Machine Works, Inc.
Fort Worth Steel & Machinery
Co.

Gerbing Manufacturing Corp.
Jeffrey Mfg. Co.
Lovejoy Flexible Coupling Co.
Minder, J. W., Chain & Gear Co.
Nice Ball Bearing Co.
Tee Co.
Worthington Corp.

SPEED INCREASERS

See INCREASES, speed

SPEED REDUCERS

See REDUCERS, speed

SPROCKETS

American Brake Shoe Co.
American Stock Gear Div.
Amplex Div.
Associated Gear & Machine Co.
Atlas Chain & Mfg. Co.
Chain Belt Co.
Cook, H. N., Belting Co.
Cullman Wheel Co.
Diamond Chain Co., Inc.
Dick, R. & J., Co., Inc.
Dodge Manufacturing Corp.
Flaton Machine Works, Inc.
Fort Worth Steel & Machinery
Co.
Gear Engineering & Mfg. Co.,
Inc.
Jeffrey Mfg. Co.
Link-Belt Co.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
Ohio Gear Co.
Remco Mfg. Co.
Union Chain & Mfg. Co.

STEAM TRAPS

See TRAPS, steam

SUBSTATIONS—unit

Allis-Chalmers Mfg. Co.
Delta-Star Electric Div.
Federal Pacific Electric Co.
General Electric Co.,
Apparatus Sales Div.
I-T-E Circuit Breaker Co.
Moloney Electric Co.
Square D Co.

SWITCHES—automatic

Allen-Bradley Co.
Automatic Switch Co.
Chance, A. B., Co.
Clark Controller Co.
Cutler-Hammer, Inc.
Delta-Star Electric Div.
Dillon, W. C., & Co., Inc.
Federal Pacific Electric Co.
Furnas Electric Co.
G. & W. Electric Specialty Co.
General Control Co., Inc.
General Electric Co.,
Apparatus Sales Div.
General Electric Co.,
Circuit Protective Devices
Dept.
Lear, Inc.
Micro-Switch Div.
Republic Electric & Development
Co.
Sangama Electric Co.
Worthington Corp.

SWITCHES—electric

Adam, Frank, Electric Co.
Allen-Bradley Co.
Arrow-Hart & Hegeman
Electric Co.
Automatic Switch Co.
Bulldog Electric Products Co.
Chance, A. B., Co.
Clark Controller Co.
Cutler-Hammer, Inc.
Delco-Remy Div.
Delta-Star Electric Div.
Dillon, W. C., & Co., Inc.
Electro Snap Switch & Mfg. Co.
Federal Pacific Electric Co.
Furnas Electric Co.
G. & W. Electric Specialty Co.
General Control Co., Inc.
General Electric Co.,
Apparatus Sales Div.

General Electric Co.
Protective Devices Dept.
Hubbell, Harvey, Inc.
Kearney, James R., Corp.
Lear, Inc.
Licon Div.
Mercoild Corp.
Micro-Switch Div.
Republic Electric & Development Co.
Spencer Div.
Wadsworth Electric Mfg. Co., Inc.
Worthington Corp.

SWITCHGEAR EQUIPMENT

Adam, Frank, Electric Co.
Allis-Chalmers Mfg. Co.
Arrow-Hart & Hegeman Electric Co.
Bogue Electric Mfg. Co.
Bulldog Electric Products Co.
Chance, A. B., Co.
Delta-Star Electric Div.
Electric Machinery Mfg. Co.
Electric Storage Battery Co.
Federal Pacific Electric Co.
G. & W. Electric Specialty Co.
General Control Co., Inc.
General Electric Co.
Apparatus Sales Div.
I-T-E Circuit Breaker Co.
Kearney, James R., Corp.
Republic Electric & Development Co.
S. & C. Electric Co.
Square D Co.
U. S. Rubber Co.
Wadsworth Electric Mfg. Co., Inc.
Worthington Corp.

TIMING BELTS

See BELTS, timing

TRANSFORMERS

Allis-Chalmers Mfg. Co.
American Rectifier Corp.
Automatic Timing & Controls, Inc.
Bogue Electric Mfg. Co.
Delta-Star Electric Div.
Federal Pacific Electric Co.
General Electric Co.
Apparatus Sales Div.
Hevi-Duty Electric Co.
Hill Transformer Co., Inc.
I-T-E Circuit Breaker Co.
Kuhlman Electric Co.
Moloney Electric Co.
Sangamo Electric Co.
Wagner Electric Corp.
Western Gear Corp.

TRANSMISSION, VARIABLE

SPEED

Allis-Chalmers Mfg. Co.
Allis, Louis, Co.
American Pulley Co.
Boston Gear Works
Cleveland Worm & Gear Co.
Cutler-Hammer, Inc.
Denison Eng. Co.
Dick, R. & J., Co., Inc.
Electric Machinery Mfg. Co.

Foot Bros. Gear & Machine Corp.
Fort Worth Steel & Machinery Co.
Gerbing Manufacturing Corp.
Graham Transmissions, Inc.
Imperial Electric Co.
Lewellen Manufacturing Co.
Lima Electric Motor Co., Inc.
Link-Belt Co.
Lovejoy Flexible Coupling Co.
Manning, Maxwell & Moore, Inc.
Minder, J. W., Chain & Gear Co.
Morse Chain Co.
National Seal Div.
Oilgear Co.
Philadelphia Gear Corp.
Reeves Pulley Co. Div.
Reliance Electric & Engineering Co.
Revco, Inc.
Salsbury Corp.
Sterling Electric Motors, Inc.
Tee Co.
Tulsa Winch Div.
Western Gear Corp.
Worthington Corp.

TRAPS—steam

Armstrong Machine Works
Powers Regulator Co.
Ross, J. O., Engineering
Sarco Co., Inc.

UNIT SUBSTATIONS

See SUBSTATIONS, UNIT

VALVES—air power line

Airmatic Valve, Inc.
Atkomatic Valve Co., Inc.
Automatic Switch Co.
Barksdale Valves
Bellows Co.
Bristol Co.
Circle Seal Products Co., Inc.
Clary Dynamics
Fisher Governor Co.
Galland-Henning Nopak Div.
Hanna Engineering Works
Hannifin Co.
Ladish Co.
Ledeon Manufacturing Co.
Leslie Co.
Logansport Machine Co., Inc.
Lunkenheimer Co.
Manning, Maxwell & Moore, Inc.
Mechanical Air Controls, Inc.
Modernair Corp.
Norgren, C. A., Co.
Numatics, Inc.
OPW-Jordan
Philadelphia Gear Corp.
Powers Regulator Co.
Rivett Lathe & Grinder, Inc.
Robbins Aviation, Inc.
Ross Operating Valve Co.
Rucker Co.
Schrader's A., Son
Skinner Electric Valve Div.
Snap-Tite, Inc.
S-P Manufacturing Corp.
Valvair
Versa Products Co., Inc.
Westinghouse Air Brake Co.
Industrial Products Div.

VALVES—hydraulic power line

Adel Precision Products
Airmatic Valve, Inc.
Atkomatic Valve Co., Inc.
Automatic Switch Co.
Barksdale Valves
Bimba Hardware & Mfg. Co.
Bristol Co.
Brown & Sharpe Mfg. Co.
Circle Seal Products Co., Inc.
Clary Dynamics
Commercial Shearing & Stamp-
ing Co.
Denison Engineering Co.
Densmore Engineering Co., Inc.
Dukes Co., Inc.
Galland-Henning Nopak Div.
Hanna Engineering Works
Ladish Co.
L. & L. Manufacturing Co.
Ledeon Manufacturing Co.
Leslie Co.
Logansport Machine Co., Inc.
Lunkenheimer Co.
Manning, Maxwell & Moore, Inc.
Modernair Corp.
New York Air Brake Co.,
Kalamazoo Div.
Oilgear Co.
Philadelphia Gear Corp.
Rivett Lathe & Grinder, Inc.
Robbins Aviation, Inc.
Ross Operating Valve Co.
Rucker Co.
Skinner Electric Valve Div.
Snap-Tite, Inc.
S-P Manufacturing Corp.
Valvair Corp.
Versa Products Co., Inc.
Vickers, Inc.
Unit Mfg. Co.
Webster Electric Co.

VARIABLE SPEED MOTORS

See MOTORS, variable speed

VARIABLE SPEED

TRANSMISSIONS

See TRANSMISSION,
variable speed

V-BELTS

See BELTS, V

WIRE & CABLE—electric

Aluminum Co. of America
Anaconda Wire & Cable Co.
Blake, Whitney, Co.
Carol Cable Co.
Collyer Insulated Wire Co., Inc.
General Cable Corp.
General Electric Co.,
Construction Materials Div.
Miljan, Inc.
Okonite Co.
Phelps Dodge Copper Products
Corp.
Rockbestos Products Corp.
Rome Cable Corp.
Tensolite Insulated Wire Co., Inc.
Triangle Conduit & Cable Co.,
Inc.
Western Insulated Wire Co., Inc.

Using this directory can save you time and money because manufacturers
listed all have Western sales and engineering representation.



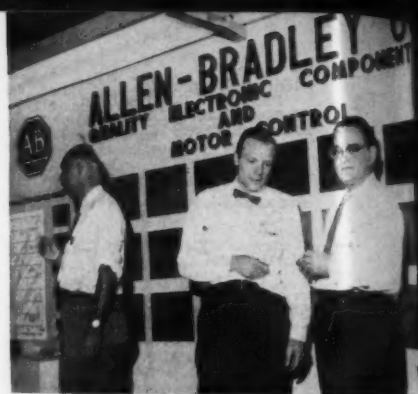
Bob Olt and A. K. Seemann featured industrial sapphires for infra-red systems at Linde booth.

WESCON Show

LOS ANGELES — Western industrial activity received another boost with the recently held Western Electronic Show and Convention here. It was evident to our on-the-spot Southwest editor, Marty Semans, that the huge attendance generated much enthusiasm among exhibitors.

Over 700 companies presented 900 electronic exhibits. In a new facet of the show presentation, one entire pavilion featured electronic production materials and equipment exclusively.

Official attendance was 33,223.



H. M. Schlicke, R. S. Hower and Herb Roth introduced Allen-Bradley Co. components and controls.



Bill Gaughan points with pride to new line of Servo components from Western Gear.



Crucible Steel answered questions on permanent magnets. W. R. Hemphill and Claude Gaskins on duty.



Robert E. Moe demonstrates noise test for General Electric Co. as part of G. E.'s exhibit.



A happy smile from Jeff Wheatley of Westinghouse. Must be all those new products on display.



John Parker, Walter B. Cooper, Roy K. Putnam and Ross Patterson discuss new Weston Instruments.



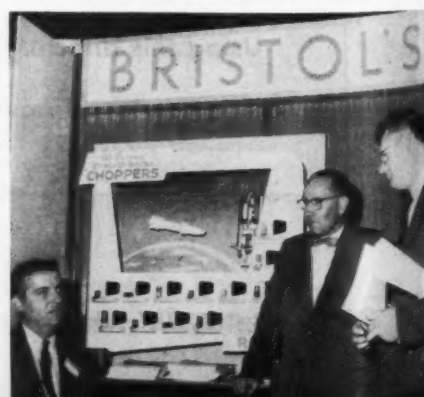
H. Allen White, James G. Munger and Henry W. Schroeder display tubes for Sylvania.



R. S. Goodyear, H. I. Van Cleef and Jim Bridges show off new Fenwal instruments.



J. W. Thomas stands guard over new components featured by the Burroughs Corp. at its booth.



Cornelius Morley, John Kearns and Clive Lawler discuss Bristol Co. switches.



Provide the right crane speed

with P&H Electronic "Stepless" Control

Only P&H — leading builder of overhead cranes for 74 years — offers you the improved control response and reduced maintenance of Electronic "Stepless" Control. This outstanding development provides new standards of smooth operation and speed selection for all crane motions.

Crane operators can pick just the *right* speed for each type of load handling. Lifts of any size — from light hook to rated capacity — can be carefully raised, speedily transported, and safely lowered in smooth "stepless" motions that mean high-speed duty cycles and damage-free handling.

With Electronic Control, a simple wiring circuit replaces 58 wearing parts . . . the same unit fits all size cranes, thus reducing protective inventories of spare parts . . . and it works on AC cranes of *any* make. Make sure your next crane inquiry or modernization includes P&H Electronic Control. Write for more information to Dept. 120W, Harnischfeger Corp., Milwaukee 46, Wisconsin.

P&H HARNISCHFEGER
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... for more details, circle No. 47 on Reader Service Postcard

HELPFUL LITERATURE for the West's plant operating executives

FOR YOUR FREE COPIES, circle appropriate key numbers on postcard, p. 99

Moulded packings design and applications

In a new, concise 12-page catalog, you can find out about moulded packings for pneumatic and hydraulic equipment. The booklet first covers the material types recommended for various pressure ranges and service classifications. Then, it provides brief descriptions and cross-sectional illustrations of each packing with needed textual, tabular and diagrammatic application data. Other packings described and illustrated include V-rings for rods and pistons, and rings suited to deep stuffing box applications. **Johns-Manville Corp.**

...for your copy, circle No. 225

99 sprocket sizes, 433 different bores

This four-pager packs a lot of details. It gives you information on finished bore sprockets, offering a choice of 99 sprocket sizes and 433 different bores. Details are put down in precise order in tables with just enough pictures and text to round out the picture. And there's even enough room to tell how products are packaged for easier handling, identification and shipping. **Acme Chain Corp.**

...for your copy, circle No. 223

Accurate selection guide to air conditioning units

With this 72-page guidebook you can choose air conditioning equipment in five minutes that previously took up to two or three hours to figure. Equipment consists of central station air conditioning units for conventional and multi-zone applications. All engineering data is contained in the handbook. Included are product features, mechanical and guide specifications, and examples using all material. Performance curves and rating tables for hot water as well as steam coils are also provided. **Carrier Corp.**

...for your copy, circle No. 227

What you should know about gearmotors

They reduce costs . . . space requirements . . . down-time . . . noise . . . power losses and wear. If that isn't enough to perk your interest in this eight-page bulletin, there are pictures, specs and—on the inside of the back cover—a guide to help you select the right gearmotor for your own special application. Parallel shaft, right angle or vertical gear units powered by a-c. or d-c. motors are detailed, and if you're tired of using belts or pulleys, or being deafened by the clanking of unshaved gears, take a flip through this fact-packed publication. **Reliance Electric & Engineering Co.**

...for your copy, circle No. 202

Direct-connected syncrogear, compact power unit

With gearmotors you gain compactness . . . safety . . . protection . . . economy and slow speeds. Where heavy duty machines require non-fluctuating power at low speeds or high torque, or both, a gearmotor is needed. It can be installed as easily as a standard motor and avoids complications involved with external gearing, reduction pulleys, protective guards and extended bases. Oh, we're not the authority—it's this big, brilliantly-colored booklet on internally geared power that's doing the talking. Charts, specs, diagrams and photographs are here in eye-catching color and if you find the reading difficult, you don't appreciate good, factual writing when you see it. **U. S. Electric Motors Inc.**

...for your copy, circle No. 203

Light weight, heavy duty gearmotors

They're light because they're made of heat treated alloy of aluminum. It has high tensile strength and is shock resistant. But take a look at the center spread of this fold-out . . . you'll see it's what's inside a motor that counts. Precision heavy duty gearing made of high grade bronze; a tang shaft that facilitates assembly and disassembly of motor without disturbing the gear unit . . . motor windings that minimize copper losses and give maximum mechanical rigidity. Double protection's provided with two oil seals for low-speed shafts and two for high-speed shafts. And there's more. Read the whole fold-out and see. **Sterling Electric Motors.**

...for your copy, circle No. 204

Motorgears for minimum space requirements

Symmetrical in design, this unit is built to provide maximum power in a minimum of space. There are no separate assemblies and it employs single, helical, alloy steel gears, with hardened and accurately shaved teeth arranged in simple gear trains. The result is ultra-quiet mechanical transmission of power at the highest possible efficiency. And this booklet, with its pictures, specs, diagrams and charts, results in the quiet transmission of facts that will prove a part of your profit pattern—if you learn their value. **Fairbanks, Morse & Co.**

...for your copy, circle No. 205

Gearmotors from 1 to 60 hp., 9 to 520 rpm.

This 18-pager is a guide to one company's special line of integral and all-motor gearmotor units. It opens with complete selection instructions and follows with application classification tables. There are precise ordering instructions and minimum sprocket diameter tables as well as overhung load capacity data. Double reduction dimensions and a list of back stop and slide rail standard accessories complete a very informative piece of instructive gearmotor reading. **Western Gear Corp.**

...for your copy, circle No. 206

Fluid-shaft motors, motoreducers, helical gears

The first of these brochures, an eight-pager, covers a variety of gear products. Page 4 describes in detail single and double reduction helical gear units, as well as single reduction right angle worm gear motoreducers. They come in a variety of combinations . . . standard, fluid-shaft, multi-speed, or slip-ring driving motor, as well as with magnetic brakes. Then there's a single page brochure which describes fluid-shaft motors and motoreducers. On the back page you'll find details of fluid-shaft break motors. The description of magnetic disc brakes on page 5 of the 8-pager is worth special note. They operate on a new direct-action principle eliminating conventional levers and linkage by a simple attraction and release action between the armature and magnet. Read about it—then file it for reference. **Reuland Electric Co.**

...for your copy, circle No. 207

Integral gearmotor bulletin

Interested in integral foot and flange mounted gear motors manufactured in ratings from 1 to 150 hp? Here's an 18-page, fact-filled, illustrated and spec-packed bulletin that's such clear reading you can't fail to be impressed by the advantages of these gear motors. Items on how hardness affects wear life, blown-up cutaways, and detailed diagrams on each working part are all presented between the colorful covers of this very worth while publication. Get it, your reference file is incomplete without it. **The Louis Allis Co.**

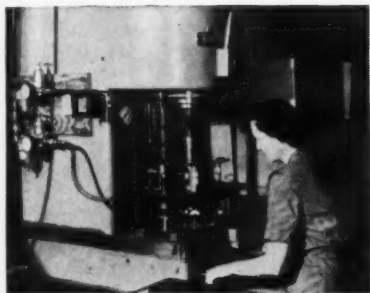
...for your copy, circle No. 208

Interchangeable and adaptable gear units

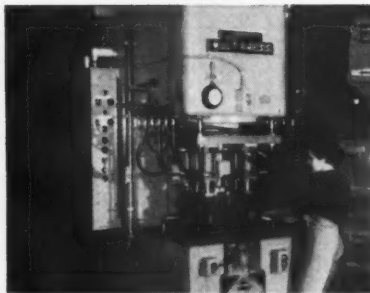
The gear units detailed in this thick, well illustrated booklet are designed to handle almost every conceivable application. Right angle and concentric shaft integral gearmotors and packaged motor reducer drives are examined in detail. And all units have anti-friction bearings and extremely accurate, heat treated alloy steel gears with ground teeth to insure quiet operation. Construction features are examined in such a detailed way, page by page, that the operation and potential application of each unit is made crystal clear. On page 7 there's a table of typical applications, and facing it, charts of allowable peak loadings. Ratio tables, mounting positions, and lists of parts by catalog number are part of this very comprehensive booklet. **Westinghouse Electric Corp.**

...for your copy, circle No. 209

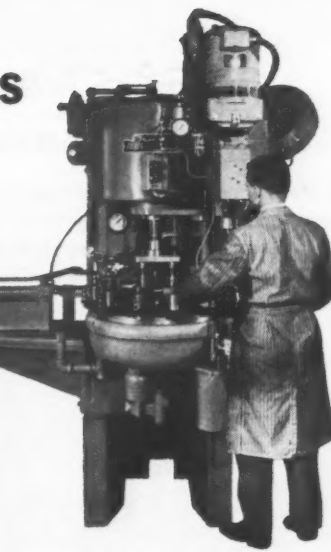
Which of these MULTIPRESS ideas will save you money...NOW?



Toy maker forms 1000 parts per hour
... 8-ton Multipress forms metal toys faster, at less cost for Mattel, Inc.



Motorola speeds production...with 100-ton Multipress that precision-punches up to 450 holes at a time in plastic TV chassis bases.



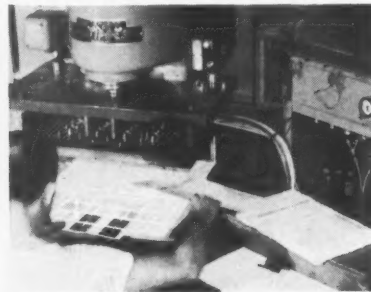
Dermeyer triples production of food mixer parts... cuts scrap loss, too, with 8-ton Denison Multipress—12-station index table.



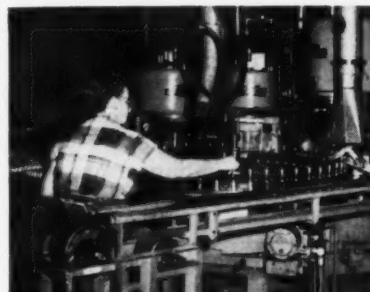
Waterman boosts output 800% with 1-ton Multipress that "angles" precision C/C pen parts fast, at low cost.



Cuts cost 73% on sub-assembly of specialty products at George S. Thompson Corp. with 4-ton Multipress. Savings—11¢ per unit.



Prints Electronic circuits 3 times as fast at Barry Process Co. with 4-ton Multipress. Controlled timing and pressure assure uniform carbon ink deposit on each printed resistor.



Auto-lite automates assembly of over 150 different types of spark plugs with a battery of 3 Multipresses operating around a 48-station index table.



Production up 33% at Cleveland Graphite Bronze—where 25-ton Multipress compresses soft carbon cores at the rate of 100 per hour.



Trimming rubber flash twice as fast... 4-ton Multipress with 6-station index table trims flash from 2400 molded rubber parts per hour. Old method called for 3 operations.

Time and money savings like these are only a few of hundreds that Denison Multipress can help you make in keeping ahead of competition today.

But modern competition means more than simply faster production. That's why *Multipress plus-benefits* are so important.

Multipress on your job can mean larger tool and die life... less scrap... higher product quality... minimum maintenance... extra operator safety. *Multipress can give you the competitive edge.*

Isn't it time you looked into Multipress? Your Denison Hydraulic Specialist can show you where and how Multipress will pay off best on your next job.

TOOLING AND PRODUCTION MEN! WRITE FOR YOUR COPY of the new DENISON MULTIPRESS all-line catalog 120-D. Specifications and application data for all-industry uses. Multipress 1 to 75-ton capacities.



DENISON ENGINEERING DIVISION
American Brake Shoe Co.

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HYDRAULIC PRESSES • PUMPS • MOTORS • CONTROLS

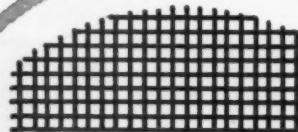
... for more details, circle No. 48 on Reader Service Postcard

for tight weave

Modern looms, correctly crimped filler wires and uniformly strong warp wires produce a tightly woven wire cloth that lends itself to easy fabrication and long service life.

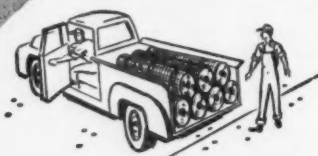


INDUSTRIAL WIRE CLOTH



for square, even mesh

Precise manufacturing techniques and rigid inspection assures absolute accuracy in sizing—an important factor in most screening operations.



for fast service

CF&I wire cloth salesmen in 40 strategically located offices from coast to coast are prepared to quote prices within minutes and to offer quick delivery of wire cloth from warehouse stocks.

full range of sizes

from 6" openings down to 200 mesh. All commonly used metals, including plain, galvanized, tin-coated and stainless steels; copper, brass, bronze, aluminum, monel, nichrome and inconel. Packaged in cylinders, boxes, crates or on pallets to meet your needs.

For further information . . . write or phone our nearest sales office. Ask for a copy of CF&I's Industrial Wire Cloth Catalog.

6084



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THE COLORADO FUEL AND IRON CORPORATION

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Butte • Denver • El Paso • Ft. Worth • Fresno • Grand Junction • Houston • Lincoln • Los Angeles
Oakland • Oklahoma City • Phoenix • Portland • Pueblo • Sacramento • Salt Lake City • San Antonio
San Francisco • San Leandro • Seattle • Spokane • Wichita
CF&I OFFICES IN CANADA:
Montreal • Toronto • CANADIAN REPRESENTATIVES AT: Calgary • Edmonton • Vancouver • Winnipeg

... for more details, circle No. 49 on Reader Service Postcard

New handling method ups storage 40%

In this new material handling survey you can learn how a manufacturer of building materials increased storage capacity 40% without increasing total plant area. The report tells how a fleet of six fork lifts, five of which are equipped with special forks and hydraulic unloader attachments, expedite the handling of finished products, speed production, storage and shipping. The survey also describes advantages provided by a 2½-ton capacity lift truck equipped with a hydraulic roll clamp that stacks huge rolls of dry roofing to heights of 18 ft. **Towmotor Corp.**

... for your copy, circle No. 228

680 optional mounts with new helical gear units

The dramatic story of single and double reduction helical-gear units for unlimited applications unfolds as you look through this booklet. It describes shaft or base mounted helical geared reducers, ratiomotors and flanged reducers. The motorized speed reducer has the advantage of being quickly repaired because the motor is rapidly detachable and it is unnecessary to detach the motor. The booklet pictures all units available and shows their components. Horsepower rating tables and mounting diagrams help complete the story. The 66 models available offer 680 optional mounting arrangements. **Boston Gear Works.**

... for your copy, circle No. 229

An engineering guide to steel belt conveyors

To help you design and specify your own steel belt conveyor, this eight-page engineering guide contains many aids such as nomographs, tables, line drawings, and graphs. These aids greatly simplify the calculation of dimensions, horsepower requirements, pulley diameters and idler roller spacing. Text gives information on properties of both carbon and stainless steel belts, methods of support, end joints, inclines, belt tension. Installation photos show steel belts in use in handling a wide variety of items. **Sandvik Steel Belt Conveyors.**

... for your copy, circle No. 230

65 *this is modern office lighting ... Fireman's Fund*



Comfortable light is worth its weight in work!

Step into the new San Francisco headquarters of Fireman's Fund Insurance Company, and you find a beehive of activity . . . and yet there's a certain quiet, restful atmosphere to it all. Looking about, you see the ceiling is all alight . . . not harsh, spotty light but soft, even light that aids hardworking eyes.

How's it done? It's a new type of louvered ceiling suspended below curved translucent fixtures. The fixtures shield fluorescent tubes which are set 12-inches apart.

Such a comfortable seeing environment works wonders for office efficiency. Makes an impression on "visiting firemen," too. This is the kind of modern office lighting you will learn more about by sending for the free book offered at right.

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Without cost or obligation, please send me the
"Fact Book on Certified Lighting for Offices."

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Company _____

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Northern California Electrical Bureau

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... for more details, circle No. 50 on Reader Service Postcard

POWER TRANSMISSION SPECIALISTS

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... for more details, circle No. 51

New expanded line of dry fluid drive

This just-off-the-press manual gives you all the facts on this dry fluid drive. The 24-page book doesn't fool around. Starting off with details of the drive, it launches into actual photos of practical problems solved by Flexidyne. Then it gives you cut-away photos and drawings to show you how the dry fluid drive works. If you're not convinced, there are plenty of engineering tables and data to back up all points. A good feature is simplified charts on selecting the right drive for you ... and recommended V-belt drives for the Flexidyne. Dodge Mfg. Corp.

... for your copy, circle No. 231

Lubrication manual for wire ropes

How soon after wire rope is put into use do you lubricate? How often do you lubricate? If you do not know the answers to these questions, you can find out by looking through this 10-page manual. Sections include general rules for lubrication; field lubrication; and how to make sure the lubricant penetrates. Also included are handy tips on proper lubricants; and various methods of applying the oils. Union Wire Rope Corp.

... for your copy, circle No. 232

A new dimension in corrosion control

Magnificent color pictures show new 4-D wrought iron in production. Then the eight-page book shows you why this metal has established a new dimension in corrosion control. The 4-D wrought iron is compared with standard wrought iron and ferrous substitutes in many typical installations ... and it wins out in each case! Testing results back up the claim for this iron. If you need an economical, highly corrosion resistant metal ... one that has a high resistance to shock and vibration ... is ductile and malleable and welds easy—then this book has some answers for you. A. M. Byers Co.

... for your copy, circle No. 233

Major break-through in chemical milling

This bulletin for design men and production engineers describes the first breakthrough in chemical-milling of cast parts. New developments deal with various techniques perfected in use today to actually improve, in many cases, the surface finish of cast parts through chemical milling. The six-page bulletin includes tolerances attainable, suitability, over-all and controlled area reduction, and surface finishes that can be consistently expected when casting such metals as aluminum, magnesium, mag-thorium, steel and other cast alloys. United States Chemical Milling Corp.

... for your copy, circle No. 234

Fact, picture book on aluminum sulfate

A trip through this 32-page book is a rewarding experience. Facts and pictures are well blended to show you how aluminum sulfate is made and how it can be used in your operations. Especially interesting is the section on storage and handling equipment. And diagrams detail both pump and gravity discharge systems. Towards the back of the book are tables of temperature corrections and conversion tables. Yes, this book will be a valuable addition to your library. Allied Chemical, General Chemical Division.

... for your copy, circle No. 235

Three special grades of Kaisaloy steel

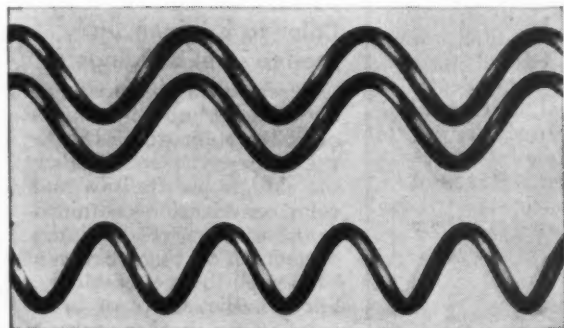
If you can use a prime high strength, low alloy steel ... then "Kaisaloy" is for you. You can find out about the three available grades by reading this 20-page booklet. Kaisaloy No. 1 is the regular grade; No. 2 is forming grade; and No. 3, wear resistant grade. The manual gives general information about each grade, shows pictures of applications, and then details (in chart form) information on tensile values, characteristics, chemical composition, fabricating practice, etc. You'll be interested in the section on page 16 describing weldability ... and the fabrication section on page 17. Kaiser Steel Corp.

... for your copy, circle No. 236

Wire Experts Quiz

For each of these prominent Western manufacturers, skilled USS metallurgists recommended the one right USS wire for the job.

Can you name the finished product?



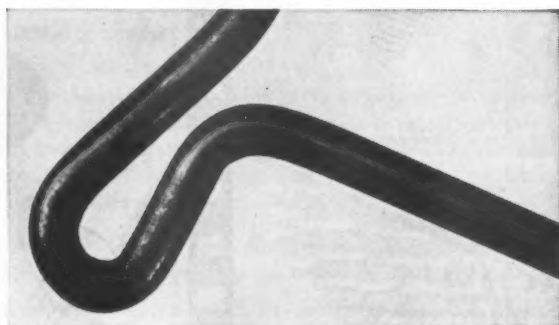
1 Kay Manufacturing Corp., of Oakland, California wanted a wire of consistent roundness and high tensile strength to take a tough, fast, automatic forming and assembly process. The right wire for the job was 17 ga. USS* Premier Special Automatic Lacing Wire. The product: Helicals to join mattress springs.



3 K-Lath Corp. of Alhambra, California wanted a heavy-duty wire, with uniform temper and a tight, even galvanized coating, to take high-speed automatic welding. USS Soft Basic Galvanized Wire, met all these requirements exactly! The product: Reinforcement backing for plaster.



2 DeLamar Bed Spring Co. of Los Angeles, California needed a wire with uniform tensile strength, tough enough to withstand severe crimping. A USS survey of DeLamar's production process came up with the ideal answer: 14 ga. USS Premier* Spring Wire. The product: Top crimp wire for box springs.



4 Pacific Wire Works Co. of Seattle, Washington called for a clean wire that was especially suitable for welding and able to take 180° bends easily. It had to be smooth and sliver-free. USS Clean Bright Basic Wire filled the order in every specification. The product: Self-stacking food freezing trays.

Are you using the right wire for your production needs? USS metallurgists are constantly tailoring new wire for Western industry. For a review of your wire requirements (no obligation, of course), write our Wire Service Dept. WI9, Room 1260, 120 Montgomery Street, San Francisco 6.



**Columbia-Geneva Steel
Division of
United States Steel**

When you build,
remodel, add on...
be sure to get

FREE LIGHT!
with RIPPOLITE
translucent
plastic panels!



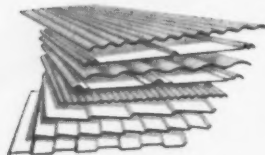
Rippolite cuts glazing costs up
to 60%...cuts glare to pleasant
diffused light.



Fast and easy to install—even
on cloudy days transmits good
working light...cuts light bills.



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Defies vandalism.



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colors...quality engineered
since 1944. Guaranteed to comply
with U.S. Dept. of Comm. Specs.
Coml. Standard CS 214-57.

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ZONE _____ STATE _____

... for more details, circle No. 53

Automatic set-screw driver reviewed in new bulletin

You can drive 2,500 set screws an hour with the new Setomatic. Interested? Then read about it in this new four-page manual that pictures and describes this new device. Billed as both a building block for fully automated production lines as well as an attachment for a single machine, the device automatically feeds, inserts and tightens socket set screws ranging in diameter from No. 4 to 3/8 in., in lengths up to 3/4 in. Pictures show close-ups of feed and drive mechanisms and diagrams depict three modes of operation. Overall dimensions, basic engineering specifications and major features are detailed. **Standard Pressed Steel Co.**

... for your copy, circle No. 237

Planning guidebook for flexible automation

This eight-page guidebook defines "Flexible Automation" as use of numerically-controlled machines to make possible the economic production of job-lot orders and prototype development. Five steps toward establishing this

type of automation in a manufacturing plant are suggested and a checklist is offered for use in establishing whether or not a need exists for incorporating this concept into an operation. Actual case histories are cited showing reductions in production time and costs, and increases in accuracies and machine flexibility. **General Electric Co.** ... for your copy, circle No. 238

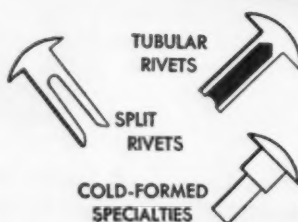
Color to brighten up pre-fab steel buildings

A world's first: pre-engineered steel buildings in color! This color guide brochure allows you to visualize the design possibilities and color combination contained in a new vinyl-aluminum protective coating that can be applied to steel buildings. Six metallic colors of blue, rose, green, bronze, white and gray are shown. Weather durability, long life and low cost are clearly explained. **Stran-Steel Corp.**

... for your copy, circle No. 239

COST-CUTTING PRODUCTION TEAM

**MILFORD RIVETS
and RIVETERS**



Full or
Semi-automatic
Bench or
Floor Models
Single or
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**FIVE MANUFACTURING PLANTS
GIVE UNMATCHED SERVICE**

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... for more details, circle No. 54 on Reader Service Postcard

A complete roundup of plastic materials

How many different kinds of plastics are there? How many different ways can they be used in your plant? You can find out from this 90 page catalog (in two sections) which lists sizes, characteristics, prices, etc., on all types of plastic sheets, rods and tubes. A thumbnail index will lead you to the material in which you're interested and the tables will detail the properties. You'll be amazed at some of the plastics described. Ever heard of Cadco, Mylar, Implex? You will find out about these and other plastics from these catalogs. **Cadillac Plastic and Chemical Co.**

... for your copy, circle No. 240

Fiberglas form board for poured roof decks

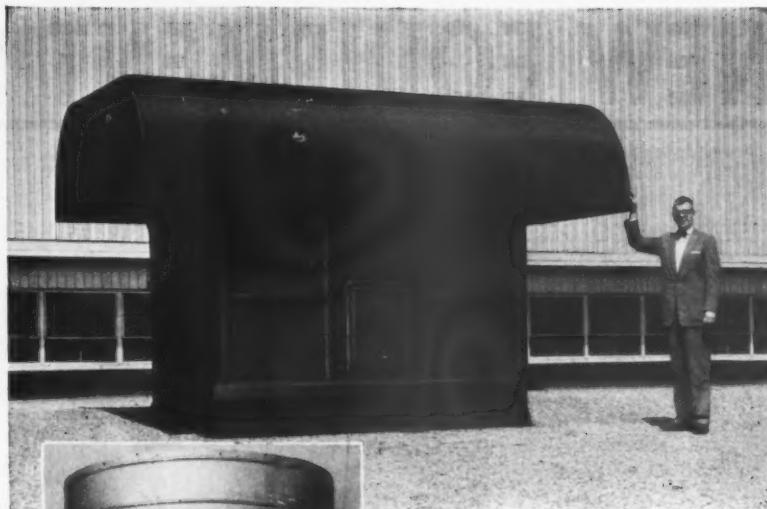
This may be the roofing you're looking for. The eight-page bulletin describes and illustrates use of Fiberglas form board for poured-in-place roof decks. Included are specification tables for heat transmission coefficients, painting and ventilating instructions, architectural specifications and drawings of typical gypsum roof deck sections, and a sub-purlin design table. Illustrations include methods of installation and pouring and appearance of finishes in high-ceiling, low-ceiling and concealed area installations. **Owens-Corning Fiberglas Corp.**

... for your copy, circle No. 241

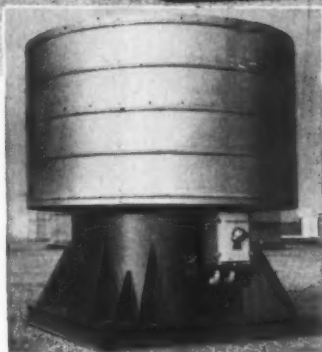
50 pages on flanges and welding fittings

For those who like information spelled out in tabular form ... this 50-page manual will be a prize. It contains size, O. D. and I. D., wall thickness, etc., on elbows, returns, straight tees, outlet tees, caps, reducers, flanges. All other pertinent data is included so you can see if the particular part is adaptable to your operation. Engineering drawings supplement the figures to give you a better picture of the part. Notes at the bottom of each page answer any other questions you might have. **Tube Forgings of America, Inc.**

... for your copy, circle No. 242



"Buffalo" Style "H" Sky-Vent Power Roof Ventilator.



"Buffalo" Style "V" Sky-Vent Power Roof Ventilator.

ECONOMICAL "BUFFALO" VENTILATING PACKAGES

Your Maintenance Staff Can Easily Install!

Do you need high volume exhaust ventilation for plant areas where duct work would be unduly expensive — or for locations without adjacent outside walls? Ventilation that will not consume valuable production space, or interfere with future plant modifications? Then "Buffalo" Sky-Vent Power Roof Ventilators are your *practical* answer — for these reasons:

- **Economical to Install** — "Buffalo" Sky-Vents are shipped as completely assembled packages, including fan, motor, housing, hood and roof curbing.
- **Economical to Operate** — The high efficiencies of "Buffalo" fans result in the lowest possible operating costs.
- **Economical to Maintain** — Maintenance expense is held to an absolute minimum by "Buffalo's" rugged, rigid, weather-proof construction and 1/8" thick cork impregnated asphalt coating on interior and exterior surfaces.

Dependable, economical, trouble-free "Buffalo" Styles "H" and "V" Sky-Vent Power Roof Ventilators are available with famous "Buffalo" Propeller or Axial Flow Fans in 12" through 120" wheel diameters, to exhaust 1000 to 250,000 CFM of hot air, fumes and fogs. For complete application information, contact your nearby "Buffalo" engineering representative—or write for Bulletin FM-2345.



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Buffalo Pumps Division, Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

INDUSTRIAL EXHAUSTERS • BELTED VENT SETS • PROPELLER FANS • "E" BLOWERS-EXHAUSTERS

... for more details, circle No. 35 on Reader Service Postcard

NEW EQUIPMENT for Western plant operation production, and maintenance

USE RIP-OUT POSTCARD, page 99, for more information on products described

ALUMINUM SOLDERING ROD

... requires no flux, brushing

Designed for use in a wide range of joining and filling applications, this new aluminum soldering rod provides a good color match and is clean to use ... requires no flux ... no washing and no wire brushing. Pre-cleaning and post cleaning are unnecessary. The new Al-Solder is applied by rubbing across joints that have been heated. The flame is not directed on the rod. Melting and wetting takes place 400 to 500 deg. below the melting point of the aluminum at a temperature of 720 deg. F. Air Reduction Pacific Co. ... for more details, circle No. 250



NEW INDUSTRIAL BOARD MATERIAL

... for bench tops and flooring



Lebanex is a composite board, composed of laminations of veneer, with Lebanite Hard-board facing on both sides. The material is available in four grades, in thicknesses from 1/2-in. to 1 1/2-in. All grades are suitable for interior or exterior use, as a special exterior-type, phenolic-resin glue is used throughout the line. The material will not delaminate under subsequent hot-pressing processes. The Lebanite surface is a dry-process hardboard or homogeneous structure that takes any kind of paint or clear finish without leaving "dry" spots. Cascades Plywood Corp. ... for more details, circle No. 252

HEAVY-DUTY LAMP

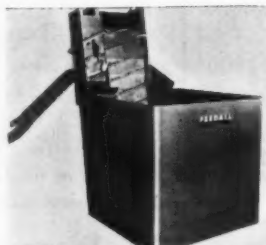
... ideal for intricate jobs



Ideal for intricate jobs requiring a strong, close-up light, this lamp attachment can be used on radial saws, drill presses, shapers, lathes, and other industrial tools. A 16-in. flexible arm permits the lamp to be quickly set in any position ... and a goose-neck swivel allows the light to be directed from the best angles. A steel shade protects the bulb and prevents glare. The lamp, which takes a 60-watt bulb, is held rigid by a heavy steel clamping device. It clamps onto any ledge by means of hardened set screws—eliminating drilling holes in the machinery. Rockwell Mfg. Co., Delta Power Tool Div. ... for more details, circle No. 251

ORIENTING PARTS FEEDER

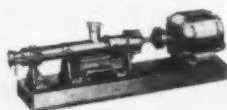
... has wide work range



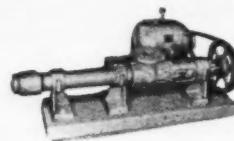
The parts feeder provides fully automatic feed for high speed grinders and special press operations. It orients and feeds both rolling and sliding parts in continuous production and is completely contained. The 25-cu. ft. hopper has large capacity for parts accumulation, storage and sustained output. In addition to its basic application on double-disc grinders, the feeder has many uses on centerless grinders and special press operations. Feedall, Inc. ... for more details, circle No. 253

With Moyno Pumps Material Is Moved!

NO TYPE LIMITATIONS. The Moyno principle knows no type limitations. Liquids, abrasives, solids in suspension—a Moyno pumps all with equal ease. There's only one moving part, a helical rotor turning in a double helical stator—no delicate vanes, no reciprocating parts, no valves. That's why a Moyno is always on the job where pumping was a problem.



HOW ABOUT YOU? These amazing pumps have solved hundreds of tough pumping problems. If you're interested in good pumping, investigate the advantages Robbins & Myers Moyno Pumps have to offer. They'll stand up where other pumps fail, delivering positive pressures, without pulsation. There's a Moyno for every purpose. Chances are they're just what you're looking for. Why not inquire today?



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Where you want it!
When you want it!

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Telephone OLIVE 3-2360

... for more details, circle No. 56 on Reader Service Postcard



Raw materials in select grades and types of low carbon and spring steels are held in substantial inventories at all times.

Modern annealing furnaces with electronic controls insure development of controlled grain structures and tempers.



The Sendzimir mill—Producing specialty strip in widths to 13" and in thicknesses of .005" to .085". Heavier gages to .125" are rolled on other mills.

Specify Calstrip for Strip Steels!

...Just like having your own steel mill

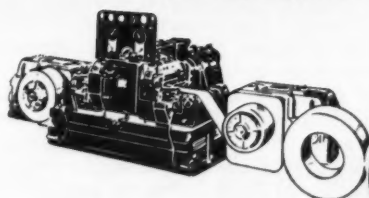


View of finishing lines at the Calstrip mill. Slitting and edging operations in the foreground.

Specify Calstrip then sit back and relax. You get fast, dependable delivery of cold rolled strip steels *specialty produced for you.*

Specialty strip steels in a complete range of sizes, grades and types not generally available from other mill sources are produced by Calstrip at Los Angeles. These steels are never taken from stocks of "standard" items, they are carefully processed on each order to the exact quality required for your individual fabricating operations.

Let us tell you about the many advantages in doing business with *Calstrip*... "your own steel mill." Call or write us today and receive our immediate attention to your requirements for low carbon and spring steel strip.



Calstrip® STEEL CORPORATION

MILL and OFFICES: 7140 BANDINI BOULEVARD • LOS ANGELES 22, CALIFORNIA

RAYmond 3-1344

GAR-BRO WHEELS

FOR ALL INDUSTRIAL APPLICATIONS



26
TYPES & SIZES

WHEEL TYPES: Drop Center, Lug Base, Disc, Demountable.

WHEEL DIAMETERS: 21", 20", 18", 17", 16", 15", 12", 10", 8", 6".

BEARINGS: Tapered roller, straight roller or ball.

TIRES: Pneumatic or cushion—all standard sizes.

Available with or without tires.

Write for catalog.

GAR-BRO WHEEL COMPANY

Division of Garlinghouse Bros.

2415 E. Washington Blvd., Los Angeles 21, Calif.

... for more details, circle No. 58 on Reader Service Postcard

10% DOWN BUILDS COMPLETE EMPIRE STEEL BUILDING



Empire EXCLUSIVE
BUY NOW plan—
full 90% financing

Example: THIS CUSTOM 4,000 sq. ft. steel building only \$658.00 DOWN (\$197.98 per month) on 36 mo. repayment schedule—terms up to 10 years.

All sizes and types of Empire buildings are available on this 10% plan. The building above is the newest look in the building field, 40' x 100' clear span, dieformed panels, truck and walk-in doors, sealed base, many accessories—erected in Los Angeles area; similarly low cost elsewhere.

Choose your plan: 1. Buy for 10% down on your property, paid for or not. 2. Buy for 10% down on leased property. 3. Lease on your property or leased property. Telephone or write now!

EMPIRE / STEEL BUILDINGS CO.

Concrete tilt-up—masonry—steel construction

TELEPHONE
Capitol
2-9181

EMPIRE STEEL BUILDINGS CO.
2137 N. Marianna Ave., Los Angeles 32, Calif. G

☐ Please send literature

☐ I'd like to discuss Empire financing plans, without obligation

Name _____

Firm _____

Street _____

City _____

State _____

... for more details, circle No. 59 on Reader Service Postcard

112

SNAP-ON INSULATION

... crushproof, easy to apply



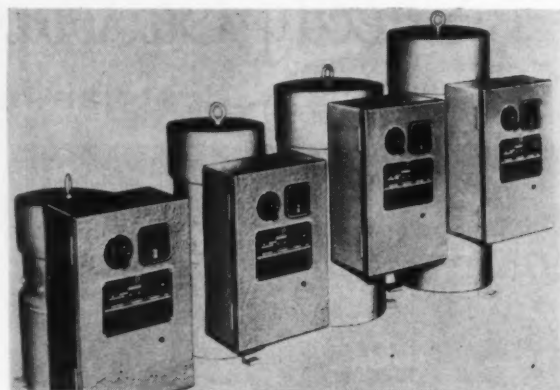
Designed for service between 200 F. to plus 250 F. this snap-on thermal insulation has a low k factor, excellent resistance to physical damage, and unusual resistance to chemical and solvents. It is ideal for all refrigeration work and low-pressure (5 psig) steam lines. The insulation does not fray, crumble, or break in handling; neither does it

disintegrate when subjected to water or many other liquids. On drying, the insulation is as good as new. The insulation is preformed to fit pipelines and fittings... and readily deforms to be slipped over pipes and fittings, then immediately snaps back to its original shape. Urethane insulation is not affected by high humidity, will not rot or decay, and is vermin-proof. It will not attack metals or cause them to corrode. This type of insulation causes no dusting or splinters. It is easy to handle, quick to install, economical to use. Its low density (about 3 lb. per cu. ft.) means little weight is added to the pipe line. National Aniline Div., Allied Chemical Corp.

... for more details, circle No. 254

VERTICAL BATTERY CHARGERS

... require two-thirds less space

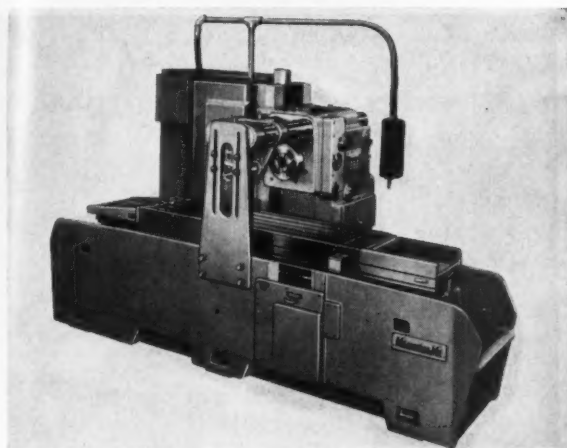


You can save approximately two-thirds the floor space you're now using by installing these new vertical motor-generator chargers for industrial truck batteries. Part standardization and simplification of design produce substantial additional economies, both in charger maintenance procedures and time. Saving floor space by utilizing vertically-mounted motors and more compact design, the fully-automatic chargers also provide you with a wide choice of electrical ratings, permitting better matching of charger to individual battery requirements. The chargers come in four different sizes, yet provide a choice of 25 different ratings. Ratings range from 0 to 800 amp. hours. Exide Industrial Div., The Electric Storage Battery Co.

... for more details, circle No. 255

WESTERN INDUSTRY — September 1958

BED TYPE MILLING MACHINE
... dial-programs machine functions



Automatic production milling by dialing the results directly from the blue print is possible with the bed type milling machine. The operator simply dial-programs machine functions on the unique Dial-a-Cycle control panel, by means of phase-switch dials, that control each machine function automatically. Any number of functions can be phased into a cycle, including automatic quill retraction, rise and fall to the head, and tracer control. With Dial-a-Cycle control, operations progress from one function to the next smoothly and quickly. Kearney & Trecker Corp.... for more details, circle No. 256

...from horse cars to rockets



An impressive record since 1872
manufacturing

the Quality Line



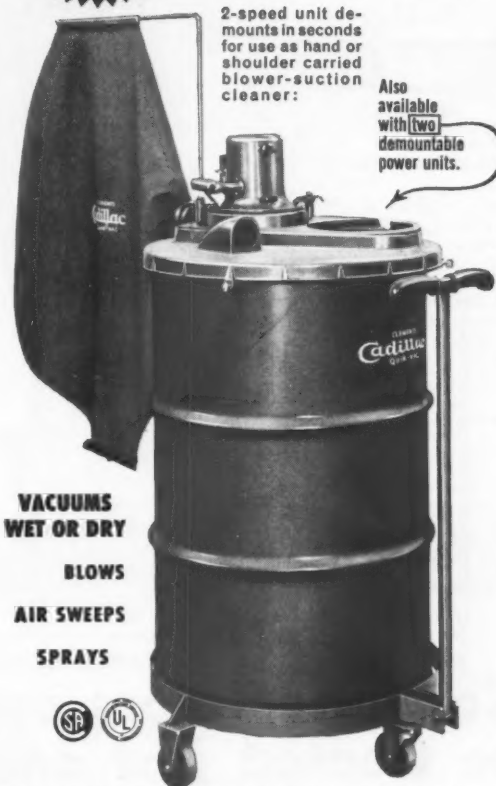
MACHINE KEYS • TAPER PINS
STAN-HI-PRO KEYS • STRAIGHT PINS
WOODRUFF KEYS • COTTER PINS
MACHINE RACK • SPECIAL PARTS

Since the days of horse cars "Stanho" has come a long way in serving industry. Today's "rocket-age-needs" call for the precision-quality of Stanho Steel Products. Available also in other metals. Bulk or packaged. Write for details.

STANDARD
HORSE NAIL CORP

... for more details, circle No. 60 on Reader Service Postcard
WESTERN INDUSTRY — September 1958

NEW! **CLEMENTS**
Cadillac®
MODEL 55



2-speed unit de-mounts in seconds for use as hand or shoulder carried blower-suction cleaner:

Also available with two demountable power units.

VACUUMS
WET OR DRY

BLOWS

AIR SWEEPS

SPRAYS



.....
HERE'S YOUR BEST VALUE
IN A BIG CAPACITY
ALL-PURPOSE CLEANER

New—and powerful! Versatile and rugged! Exclusive two-speed motor with high speed for the tough sump jobs... reduced speed for ordinary cleaning. Strong, easy-roll dolly turns on its own diameter. Casters and handle grips are oil resistant. Position retaining handle. Clements Cadillac high-quality throughout, yet priced with the lowest!



ASK FOR NEW
BULLETIN
2005

SAVE MONEY
3 WAYS



ORDER COMPLETE
... with either one or two portable two-speed blower-suction units, gasketed cover, 55 gallon painted drum, easy-roll dolly and choice of attachments.



ORDER WITHOUT DRUM
Use your own 55 gallon drum. Order gasketed cover, one or two portable two-speed blower-suction units, easy-roll dolly plus choice of attachments.



ORDER CONVERSION KIT
Converts your Cadillac Blower-Suction Cleaner or Model 14 Vacuum Cleaner to a big capacity Model 55. Order only gasketed cover and easy-roll dolly.

SINCE
1910

Industrial Products Division

CLEMENTS MFG. CO.
6632 S. Narragansett Ave., Chicago 38, Ill.

... for more details, circle No. 61 on Reader Service Postcard

SAFE OPERATION OF OVERHEAD VALVES

with a

Babbitt

Adjustable
SPROCKET RIM
with Chain Guide

- Simplifies pipe layout
- Fits any size valve wheel
- Easy to install and operate
- Operates any valve from plant floor
- Time and money saving fixture
- No maintenance, first cost only cost
- Packed, completely assembled, one to a carton
- Hot galvanized, rust-proof chain available for all sizes
- Easy to follow instructions with each unit
- Your supplier carries complete stocks
- Write for new descriptive catalog sheet and prices



Babbitt

STEAM SPECIALTY CO.

13 BABBITT SQUARE, NEW BEDFORD, MASS., U.S.A.

... for more details, circle No. 62 on Reader Service Postcard

Concrete floors can be treated *just once* to prevent dusting — for **LIFE!**



Forms an integral
resilient stratum
that lasts as long as
the floor. Not a surface
film or coating.

NOT A CHEMICAL

ONE inexpensive application of
WATCO Concrete Hardener
permanently prevents damaging dust.

PROVED — on over 20,000,000 sq. ft. of floor—in USA and abroad. This oil-and-resin compound binds new or old concrete into a non-dusting, non-porous, tough, wear-proof floor. Resists water, oil, acid, alkali. WATCO is non-chemical—safe—never needs another treatment. So easy to apply—so low in cost. Tremendous savings in upkeep as well as freedom from gritty dust. Send for **FREE FLOOR FACTS** and see how plants like yours have cut maintenance costs and ended the dust menace. Write for nearest distributor. WATCO Sales Co., 4016 W. 3rd St., Los Angeles 5, California. Phone DUnkirk 3-7514.

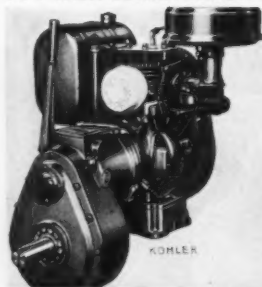
... for more details, circle No. 63 on Reader Service Postcard

EXPLOSION-PROOF WALKIE TRUCKS ... maximum safety in hazardous areas



Designed to meet Underwriters' Laboratories Type EX-Class I-Group D specifications, this truck provides maximum safety in the most hazardous locations. All electrical switches, motors, and junctions are sealed in specially designed enclosures. Wiring is contained in armoured conduit. To eliminate the hazards and heat of resistance boxes normally used on this type electric truck, a unique battery arrangement is employed to permit flexible speed control. The battery itself is completely sealed. **Moto-Truc Co.** ... for more details, circle No. 257

AIR-COOLED, SHORT STROKE ENGINE ... with combination clutch reduction unit



Rated at 12.5 hp. at 3,200 rpm. this engine is designed for applications requiring heavy starting loads and low power take-off speeds. The clutch reduction assembly combines a dry type clutch equipped with anti-friction ball bearings and a chain driver reduction gear with the power take-off shafts mounted on rolled bearings. The engine is available in 2:1, 3.25:1 and 3.79:1 reduction ratios. Starting equipment consists of either conventional rope starter or 12-v. combination starter-generator. **The Kohler Co.**

... for more details, circle No. 258

✓ **check**
the many advantages of
SORBOCAST
CAST IRON
DAYTON FOUNDRY
Hollydale, Calif. • NEvada 6-1251

... for more details, circle No. 64 on Reader Service Postcard

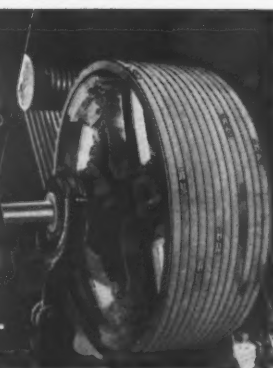
UNDER WATER OPEN MOTOR ... with epoxy-encapsulated stator



Ever know a motor that liked water? This one does — and likes to churn bubbles at full rpm. How does it do it? It's all possible because of its epoxy-encapsulated stator . . . and its all-silicone rubber insulating system. Silicone rubber insulation for coil windings is vulcanized into a solid dielectric wall without joints, voids or breaks. Insulation resistance is reduced very slightly after long periods of immersion, but not to the point of electrical breakdown. Encapsulated stator windings are equally well sealed. Extensive underwater tests of open motors with epoxy encapsulated stators at full load proved the structure impervious to moisture. Allis-Chalmers Mfg. Co. . . . for more details, circle No. 259

ALLIGATOR V-BELT FASTENERS

make this possible . . .



Now you can keep costly "downtime" at a minimum (no need to dismantle machinery) . . . make up special size V-Belts quickly . . . simplify the replacement of worn or damaged V-belts.

Remember: Open-end V-Belting assures you of . . .

- ✓ Far less stretch than other "connected-type" belting
- ✓ Top drive performance — greater traction surface between drive belt and sheave.

And! . . . Alligator V-Belt Fasteners provide one strong joint . . . terrific holding power!

FOUR TYPES . . .

- Regular Alligator V-Belt Fasteners for B, C, D, E and BB V-Belting.
- Aluminum • Monel
- Permanently Assembled Fasteners.

ORDER FROM YOUR DISTRIBUTOR OR WRITE TO . . .

Flexible STEEL LACING COMPANY

4642 LEXINGTON ST.

CHICAGO 44, ILLINOIS

. . . for more details circle, No. 65 on Reader Service Postcard
See listing in Directory Section

we're the *other* Goodyear

specializing in rubber
products for industry



The lining of steel tanks and equipment with rubber and plastics calls for great technical skill. Here at Goodyear we are proud of our workmanship.

* Matter of fact . . . the original. Established 1872, we have no connection with the firm that manufactures automobile tires.

- O. S. & D. hose for petroleum industry.
- Rolls for paper, steel and graphic arts industry.
- Specialized rubber products for marine, aviation and electronics industries.
- Gaskets for the irrigation field; also pneumatic seals, or rubber parts where extreme heat is employed.
- We also rubber-line and cover tanks, pipe and process equipment where corrosion, abrasion and contamination is a problem.

If you are in need of a product, service or an idea in man-made or natural rubber . . . call us. We invite your engineering department's inquiries.

Please write for our new 16 page brochure:

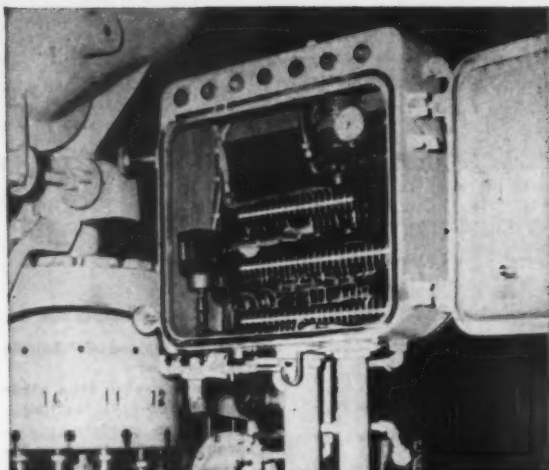
"RUBBER PRODUCTS FOR INDUSTRY"

Goodyear Rubber Company, 2400 Third St., Box W1, San Francisco, Calif. Please send me your new brochure "Rubber Products for Industry"

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Firm Name
Street
City State

GOODYEAR RUBBER COMPANY

2400 THIRD STREET • SAN FRANCISCO, CALIFORNIA



NEW WIRE FOR "HOT SPOTS"

Anaconda's new Densheath* 900 all-purpose wire—made with a new, high heat-resistant PVC insulation—gives plants an extra margin of protection wherever wiring is exposed to chemicals, oil or moisture at high ambient temperatures; and affords greater current-carrying capacity! Densheath 900 is approved as Type TW and can be used in National Electrical Code applications. In other applications, it can be used to its maximum rating of 90°C copper temperature. Available in sizes 14 Awg to 2000 Mcm. Write for descriptive Bulletin DM-5612. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y. 07940

ANACONDA®

*Reg. U.S. Pat. Off.

... for more details, circle No. 67 on Reader Service Postcard
See listing in Directory Section

**This Exclusive
SURETY GLOVE
COMBINATION
SOLVES MORE
HAND PROTECTION
PROBLEMS**

than any other
we know



**SURESEAL
(HYCAR)
TURN-CUFF
INDUSTRIAL GLOVES**

Tests prove Sureseal's amazing long life—ten times and more wear than other materials. Since Surety makes gloves from all materials you may be sure of test impartiality. Adding Surety's famous safety feature, Turn-Cuffs, the barrier to dangerous liquids, provides the maximum hand safety and comfort to make willing hands and willing workers. Ask your jobber or write Dept. WI, The Surety Rubber Co., Carrollton, Ohio.



TEST

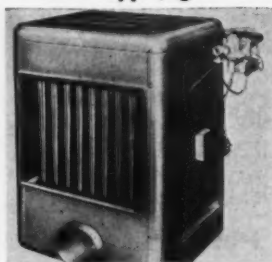
at our expense
Send for slide rule
showing gloves best
to resist chemicals,
acids, oils, solvents,
etc. Tell us your
glove need, too...
we'll send sample
pair.

Western Sales Rep: The Macintosh Co.
3030 Bridgeway, Sausalito, Calif.

... for more details, circle No. 68 on Reader Service Postcard

NEW SERIES UNIT HEATERS

... duct-type, gas-fired

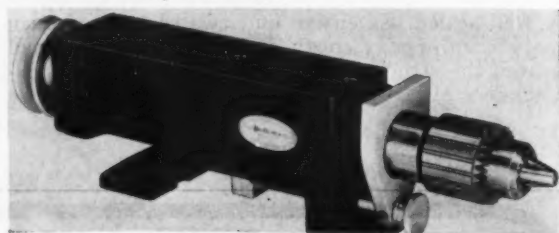


A new size range (including six models rated from 50,000 to 165,000 BTU/hr. input) in duct-type gas-fired unit heaters is available. Compact and efficient, the new heaters are recommended for automatic heating in all types of industrial forced-air duct-distribution systems. They are practical when revamping outmoded central fan-heating and ventilating systems or for adding heat to air conditioning systems. They serve well as booster heaters to provide extra heat in under-capacity central forced-air heating plants. The heaters are also especially well suited for use in industrial processes requiring controlled automatic heat for drying and curing. American-Standard, American Blower Div.

... for more details, circle No. 260

LOW COST DRILL HEAD

... small size, versatile



Slightly larger than a carton of cigarettes, the drill head will perform many operations in machining of softer materials. The unit will drill, tap, ream, spot face, countersink and counterbore. Its small size gives it special advantages in close-quarter applications in the machining of light-gage steel, non-ferrous metals and in the working of wood, plastics and rubber. It can be mounted in any position, singly or in groups for synchronous operation. The Bellows Co.

... for more details, circle No. 261

HEAVY-DUTY BELT SANDER

... for dustless sanding



The all new DUST-LESS belt sander attaches to any standard industrial or domestic vacuum cleaner to eliminate over 90% of all dust and fine metal powder and provide the most efficient sanding job possible. It is built for continuous, heavy duty use, and is powered by a special B&D motor. The exclusive dustless feature provides longer belt life, with cleaner, more healthful working conditions; and it permits sanding in the same area where painting is being done. A foolproof timing-belt-drive provides smooth, quieter operation and requires no lubrication. Black & Decker Mfg. Co.

... for more details, circle No. 262

TWO NEW AIR IMPACTTOOLS

... accurate torque control and nut running

If your job calls for accurate torque control in the 50 to 150 ft.-lb. range ... or if you have nut running jobs up to $\frac{5}{8}$ -in. bolt size—investigate these new tools. Both embody a number of advanced design changes. These include an air-balanced throttle valve for easily controlled throttle graduation and trigger pull. Also, the muffling has been designed so operating air passes through three expansion chambers which eliminate all disagreeable exhaust noises. Complete one-hand control of the tool is afforded as reversing is accomplished by shifting a small lever within easy reach of the thumb. The exclusive "torsion bar" torque control keeps the torque constant for all nut running conditions, assuring proper torque of all nuts. Ingersoll-Rand Co.

... for more details, circle No. 263

SPRING STEEL CLIP

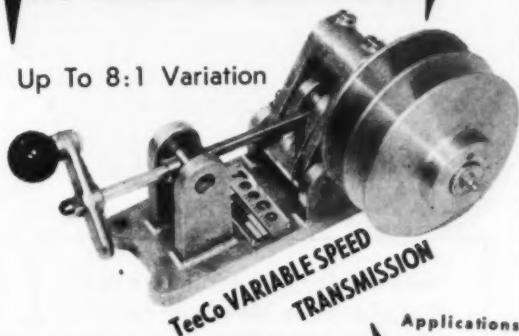
... secures transistors to equipment

With this new spring steel clip, you can secure transistors to electronic equipment chassis. The new clip will accommodate all transistors employing the standard TO-9 outline. It merely snaps into panel holes where it retains itself under live spring tension. Its tubular retaining collar has excellent heat sink properties because it completely encircles the transistor, drawing heat from all directions and transmitting it through the spring legs and tabs into the panel. Four small barbs and compression of the fastener's collar retain the transistor in a firm, vibration-proof grip. Tinnerman Products, Inc.

... for more details, circle No. 264

NOW----!
BOOST PRODUCTION—
THE 'SPEED-U-NEED'
NO MACHINE SHUTDOWN

Up To 8:1 Variation



The low cost TeeCo provides stepless speed changes without machine shutdown or changing belts. It has a floating wheel assembly that assures perfect belt alignment at any speed without loss of horsepower. Precision built of aluminum, bronze and steel, the TeeCo offers years of trouble-free service. For further information write TeeCo or fill in reader service card. Distributor inquiries invited.

TEECO TRANSMISSION CO.
1730 N. W. 25TH AVE., PORTLAND 10, OREGON

Applications
Testing Machines
Food Processing
Machine Tools
Pilot
Machines
Conveyors

... for more details, circle No. 69 on Reader Service Postcard
See listing in Directory Section

WESTERN INDUSTRY — September 1958

Cut Nut Installation Time By One-Fourth



THE BEST INDUSTRIAL FASTENER FOR THE MONEY

That's right—eliminate one work operation every time a nut-and-lock-washer is installed—and get the positive assurance of always having properly mated nuts and washers. No lock washers to put on—just start the nut, take up, and tighten. Ideally suited for hopper feeding and automated assembly operations. In addition, Eaton Keps give you uniformity piece-after-piece, and unfailingly dependable quality. Whether yours is a simple hand application or a complex machine installation—you will do the job better, easier and faster at lower cost with Eaton Keps every time you put on a nut. Send for free literature. No obligation.



EATON

RELIANCE DIVISION
MANUFACTURING COMPANY
816 CHARLES AVENUE
MANSFIELD, OHIO



SALES OFFICES: NEW YORK • CLEVELAND • DETROIT
CHICAGO • ST. LOUIS • SAN FRANCISCO • LOS ANGELES

... for more details, circle No. 70 on Reader Service Postcard

117

Get the
Full Measure
for your money!

7 cu. yds. payload

with the new, extra-earning-power

WHITE 2064

a standard production model
from White's great new line of trucks!



You should be getting payloads like this!

If you're not, call your local White Representative. He can show you how you can earn more with this brand new factory-engineered tandem chassis — the White 2064! Why not call him right now?

THE WHITE MOTOR COMPANY

CLEVELAND 1, OHIO

Factory Branches, Distributors & Dealers Everywhere

The Sierra Sand Co., Inc., adds a new fleet of 6-White 2064s with Willard Mixers to their existing fleet to better serve the booming San Diego, California area . . .

Here's the "extra-earning-power" equipment that gives them top payloads: Reo 331", 145 hp. engine; 5-speed main transmission; 4-speed auxiliary transmission; Timken FD 901 Front Axle; and Timken SLHD Rear Axle. Wheel base is 187", tires are 9:00 x 20, 10 ply.

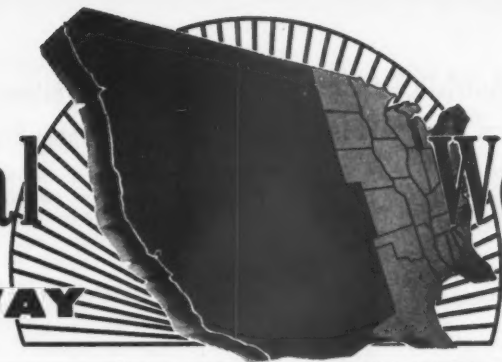
FOR MORE THAN 55 YEARS THE GREATEST NAME IN TRUCKS

... for more details, circle No. 71 on Reader Service Postcard

WESTERN INDUSTRY — September 1958

The Industrial West

ON ITS WAY



plants • production • distribution • personnel

What's Going on . . .

The West has snapped out of those summer doldrums and is back to its normal bustling activity. I saw this on a recent swing through the 11 Western states.

Bearing out the facts are . . . Soule' Steel's plans, and Liquid Carbonic's plants, on this page . . .

Reynolds Metals' two-part expansion, a 'first-in-the-West' project by Hercules Powder, and news of a big NCG plant, reported on page 121 . . .

News notes on expansions for U. S. Steel Supply, Westinghouse and Schlage Lock, detailed on page 122 . . .

Facts on a new petro-chemical plant and announcement of a trade fair in Los Angeles, page 123 . . .

Plus news about new facilities in the Oakland area (Montgomery Ward), in Fresno (paper products), in Stockton (refractories plant), in Arizona, in Portland, and throughout the rest of the West.

Pages 130 and 131 point out promotions and people picked for them.

M. C. Tracy
WI News Editor

Soule' Steel Plans Multi-million Dollar Steel Rolling Mill in Los Angeles Area

LOS ANGELES—A 22-acre site in the Dominguez industrial area here will be the location of Soule' Steel Company's new steel rolling mill, according to *Edward Lee Soule, Jr.*, president of the San Francisco manufacturer of steel building products.

Construction on the new facility, which will cost several million dollars, starts immediately, with the plant slated to be in full operation in the fall of 1959. The mill will convert scrap metal into various structural steel shapes for use by Soule' in its steel building products line and by general contractors in the Southern California and Arizona markets.

The facility will be built for a rated capacity of 36,000 tons of billet-sized ingots per year, and is designed for fast, efficient expansion to meet the rapid anticipated growth of the marketing areas it serves.

The Soule' firm, founded in 1911, manufactures steel and aluminum windows, doors, curtain and window walls, standard steel buildings and metal lath commodities. It also provides field erection service for its products.

Two New California Chemical Plants Dedicated by Liquid Carbonic Division

OAKLAND—It was a double dedication here and in San Carlos recently when Liquid Carbonic held ceremonies and a tour of two new industrial plants, one for production of liquid oxygen, nitrogen and argon, and the second for the manufacture of electrolytic hydrogen and oxygen.

Frank L. Pace, Jr., president of General Dynamics Corp., and *Rex L. Nicholson*, senior vice president of its Liquid Carbonic Division, were here for the two-part event which began with luncheon at the Oakland liquid oxygen plant and continued with an afternoon reception at the electrolytic hydrogen plant in San Carlos.

The two installations represent a capital investment of more than \$4,000,000, bringing the Liquid Carbonic Division's overall investment in the Bay Area to \$7,500,000.

The Oakland facility at 2857 Ettie St. has a daily production capacity of 30-35 tons of liquid oxygen, nitrogen and oxygen, extensively used in steel, oil, electric, chemical and construction industries. Cost of the 9,000-sq. ft. plant was \$1,600,000.

The second plant unit, which cost a little less than \$1,000,000, is located at 767 Industrial Road, San Carlos, and also houses regional offices of the division. The plant, covering some 15,000 sq. ft., produces hydrogen and oxygen gases at a rate of 5,000,000 cu. ft. daily.

Liquid Carbonic, which merged last year with General Dynamics and became an operating division, also has a plant at 901 Embarcadero in Oakland for production of carbon dioxide in gaseous, solid and liquid forms.

Plans Revealed for Big Fresno Industrial Center

FRESNO—Plans for a proposed \$15,000,000 industrial and manufacturing center here were announced by *Chester A. Bergfeld* following purchase of the main plant and property of the Rosenberg Bros. Co. at Church and Orange Avenues.

The Rosenberg firm, a subsidiary of Consolidated Foods Corp., recently sold its dried fruit and nut brand names, some packaging materials and machinery to Mayfair Packing Co. of San Jose, Calif.

The purchase by Bergfeld, president of the Manchester Mortgage Co. and *Chester A. Bergfeld Enterprises*, includes 60 acres of land with two main buildings covering 165,000 sq. ft. and 15 smaller structures. His announced plans for the center call for additional buildings, roadways, landscaping and spur tracks to two railroads.

Aerojet Growth Prediction

SACRAMENTO—According to the Sacramento Chamber of Commerce, officials of Aerojet General Corp. look for a payroll of 50,000 and annual business volume of between \$500,000,000 and \$1,000,000,000 in the next ten years.

Soule' plants are located in Los Angeles, San Francisco, Torrance, Calif., Portland, Seattle and Phoenix.

New Corrugated Box Plant Starts in Northwest

WENATCHEE, WASH.—Production is scheduled to begin this month at new fabricating plant here for manufacture of corrugated boxes. The plant was built for Northwest Wholesale, Inc., of this city and leased to Western Corrugated, Inc., of Oregon.

Located on a four-acre tract which adjoins the main line of the Great Northern Railroad, the facility covers some 28,000 sq. ft., plus office space, and is designed to allow for future expansion. Initial production is centered on cases for fresh fruit and vegetables.

U. S. Industrial Chemicals Introduces New Material

SAN FRANCISCO—"Western packagers are in the process of evaluating a new type of transparent wrap which could conceivably revolutionize the packaging industry," according to *Vincent M. McCarthy*, manager of Polyethylene Sales for U. S. Industrial Chemicals Co., New York.

Speaking at the recent Western Packaging and Materials Handling Exposition held here, August 11-13, McCarthy said that Cast Petrothene, a crystal clear polyethylene film made via a modified flat film extrusion technique and just recently introduced, is causing Western firms to take a close look, since the new film is less expensive than cellophane, yet offers comparable clarity and gloss and far greater all-round protection.

In describing the overall role of polyethylene in the packaging field McCarthy expressed the belief that cast film will give much impetus to the use of polyethylene in applications where it has never been used before.

Nelson Howard Co. Named Bray Chemicals Co. Rep

SAN MARINO, CALIF.—The Nelson A. Howard Co., 475 Huntington Drive, has been named sales representative for the Bray Chemical Co. of Los Angeles. The Howard firm will handle Bray's sodium, calcium and barium sulfonates used by the petroleum industries and certain chemical industries in the West.

The San Marino firm recently added *William F. McDonald* to its staff. A former employee of Dow Corning Co. in Southern California, McDonald will handle all products of Jefferson Chemical Co., Patent Chemicals, Inc., Elco Lubricant Corp., and Bray's petroleum sulfonates.

Burroughs Division Sets Up Denver District Office

DENVER—Burroughs Corporation's ElectroData Division has established a district sales office here, managed by *Charles V. Hoge*, recently resident sales representative. The branch here will serve as the focal point for sales and service of Burroughs data processing equipment in Colorado, Utah, and parts of Wyoming, Nevada and New Mexico.

Westinghouse Names Agent

PORTLAND—Westinghouse Electric Corp. recently named Sutherland Electric, 4411 S. E. Belmont St., as its industrial agent for Multnomah, Washington and Clackamas counties, as well as Clark county in Washington. Sutherland will distribute motors, gearmotors and electrical controls for Westinghouse.

Mt. Whitney Lumber Co. Announces Expansion Plans

PORTERVILLE, CALIF.—A \$200,000 expansion program has been announced by Mt. Whitney Lumber Co. at its facilities on the Tule River Indian Reservation. Plans call for construction of a planing mill, lumber storage shed and dry sorting chain cover at the mill site on Pigeon Creek. Construction is to begin this month, company spokesmen said.

Boysen Buys

Oakland Paint Firm

PORTLAND—Walter N. Boysen Paint Co. of Oakland, Calif., acquired the Fisher-Thorsen Co., Inc., 69-year-old Portland paint manufacturing firm. Announced sale price was just under \$300,000.

Walter Boysen, president, in announcing the acquisition, said *Warren Thorsen*, president and son of one of the founders of Fisher-Thorsen, will stay on with the Boysen Co. as director of sales for the Portland operation.

Boysen Co., founded in 1929, now distributes its "Colorizer" paints and lacquers in 11 states, Hawaii and several foreign countries. It serves more than 1,000 retail outlets in the West.

The company has division offices and warehouses in Seattle, Spokane, Sacramento, Eureka, Reno, Phoenix, Honolulu and Dallas.

Cel-Tor Starts Construction Of Chemical Plant

SAMOA, CALIF.—Now under construction and scheduled to start operation by October 15 is a 10,000-sq. ft. chemical plant that will process low grade ores including copper, zinc, cobalt, nickel and other ores mined nearby. The \$500,000 facility is being built by Cel-Tor Chemical Corp. of San Francisco, a firm incorporated in July.

Celotex Completes Addition to Storage Facilities

LOS ANGELES—A \$72,000 expansion of the Celotex Corp., storage facilities at 1633 San Pablo St., here, was recently completed. The 57,000-cu. ft. building contains 12 silos to sort granules used in making composition asbestos roofing materials for residential and industrial buildings.

Ford Consolidates Operations

LOS ANGELES, CALIF.—Passenger car assembly operations of the Ford Motor Co. in Long Beach and Los Angeles will be consolidated in the new Los Angeles plant, according to a recent announcement. The plant here will be expanded for production of both Ford and Mercury cars.

Two Oregon Industrial Groups Vote to Unify

SALEM, ORE.—Two statewide industrial organizations—Associated Forest Industries of Oregon and Columbia Empire Industries—have voted to unify under the name of Associated Oregon Industries.

Over 500 businessmen and industries with over 100,000 employees, make up the new organization, which has been under discussion for the past year.

Created to protect and advance business and industry interests, represent industry before the public and act as a clearing house of information for state industries, the group is headquartered in Portland and has a legislative office here.

Oremet Names

New Distributors

ALBANY, OREGON—New distributors have been appointed by Oregon Metallurgical Corp. according to an announcement by *Stephen M. Shelton*, executive vice president and general manager.

They are Electric Steel Foundry Co., Portland; the Landish Co., Cudahy, Wisconsin; and the Hi Vac Metals Division, Symington-Wayne Corp., Depew, New York. This move provides Oremet with a nation-wide outlet for its products.

Oremet provides a custom consumable electrode melting service for vacuum melted ingots of reactive metals and super alloys and produces static and centrifugal castings of these metals.

ESCO., Ltd., Plant Now Producing Steel Castings

PORTLAND—Electric Steel Foundry Co., 2141 N. W. 25th Ave., reports that its new Esco, Ltd., foundry in Port Coquitlam, B. C., is now in full production and supplying alloy steel castings from one-half to 5,000 lb. in weight.

Recent equipment installed at the Portland facility includes a direct reading spectograph for quick, accurate chemical analysis of steel alloys. Esco also reports a new point design, called the RDX point.

Allis-Chalmers Kilns

VICTORVILLE, CALIF.—A contract for two new rotary kilns to be installed at the Oro Grande plant of Riverside Cement Co., division of American Cement Co., has been awarded to the Allis-Chalmers Mfg. Co. Estimated cost of the equipment is \$3,600,000 and annual rated capacity of the 310-ft. kilns is 1,200,000 barrels of clinker each.

Steel Tanks Installed

YAKIMA, WASH.—Central Steel & Tank Co., 1106 N. 16th Ave., recently installed large steel plate-bending rolls that will handle steel plate up to 3/8-in. thick and 12 ft. wide. The finished products are cylinders and tanks used for gas, oil, fertilizers, honey and other materials.

Expansion Program Slated by Reynolds Metals Co. in Two Western Facilities

SAN FRANCISCO—An expansion program that will result in the first Western manufacturing operation of aluminum containers and cartons by Reynolds Metals Co. has been announced by the firm.

The expansion and diversification projects at two California locations will enable Reynolds to offer packaging customers in this area faster delivery than ever of aluminum packaging products, said Paul Murphy, vice president of Reynolds Aluminum Sales Co.

The expansion concerns a new aluminum foil plant now nearing completion at Torrance, Calif., where Reynolds will make "cook-in" pans for pies, frozen foods and similar food products. The facility will have four container presses that will turn out some 100,000 containers per shift, a new high-speed laminator to laminate foil to board stock for folding boxes, and a five-color flexographic press for gift wrappings, etc.

At the same time, Reynolds is installing a new eight-color Champlain press at its Vernon, Calif., foil printing facility, plus complete carton-making and laminating equipment that will make it the most complete installation of its kind in the West, according to Murphy.

Hamilton to Distribute Allis-Chalmers Fork Lift Line

PORTLAND—The appointment of Hamilton Engine Sales, Inc., to the distributorship of the complete line of lift trucks and materials handling products of the Allis-Chalmers Manufacturing Co. materials handling division was announced by Gordon A. Kalk, sales manager for Hamilton. Hamilton Engine Sales will handle the line in its Oregon and southwestern Washington territory. William (Bill) Morgan, Allis-Chalmers' factory representative from Oakland, recently spent about 3 weeks traveling the territory with Hamilton field men Neil Kaufman and Graeme Leggatt assisting in the organization of promotion and sales in the area.

Hercules Equipment Opens Warehouse in San Jose

SAN JOSE, CALIF.—Matching industrial growth in this area is the expansion of Hercules Equipment & Rubber Co., San Francisco, in opening a new industrial supply warehouse at 1326 N. Tenth St. This is the supply firm's first branch operation outside San Francisco.

Hercules has been a distributor of B. F. Goodrich industrial products since 1921 and is said to be the rubber firm's largest and best equipped concern of this type. The new facility, comprising 10,000 sq. ft., will stock Goodrich products including industrial hose; V-belts, and transmission, conveyor, and Koro-seal belting. Other stock consists of in-

dustrial clothing, electrical tape, friction tape, etc.

Also available will be facilities for slitting and vulcanizing conveyor belting and the coupling of hose. Gaskets made by the firm and rubber covered rolls and tank lining from Standard Rubber Co., will also be supplied and serviced from the San Jose warehouse.

Construction on \$1,750,000 NCG Facility Begins

LOS ANGELES—National Cylinder Gas Division of Chemetron Corp. has started construction on its \$1,750,000 plant for production of liquid oxygen, nitrogen and argon.

Site of the new facility is at 11719 S. Alameda Ave., Compton, adjacent to the division's plant for manufacturing oxygen, nitrogen, hydrogen and acetylene in gaseous form.

Scheduled to start production early next year, the new plant will have a daily capacity of more than 30 tons. The plant is designed for future expansion along with the increasing need for high-purity industrial gases by Western industries, particularly aviation, petroleum, electronics, metals and power.

Monsanto Plasticizers Now Custom Blended

LONG BEACH, CALIF.—The newly completed Western facilities of Monsanto Chemical Co. offer custom blending of plasticizers in bulk quantities.

The company, which markets more than 75 different plasticizers, has announced that it will make "any feasible blend" of its plasticizers here if the order is in tank wagon quantity (approx. 3,000 gallons).

It was Monsanto, in 1954, that introduced custom blending on plasticizers to the industry. The blends are priced at the composite bulk price of their ingredients.

Western Firms Awarded Missile Component Orders

SAN FRANCISCO—Sizeable contracts announced recently by Western firms include one for \$1,000,000 awarded the Garrett Corp. for developing component systems on the Atlas ICBM. Awarded by Convair division of General Dynamics, prime contractor, the order is for fuel and oxidizer control systems on the missile and for ground support. Work will be done by the AiResearch Phoenix division of Garrett.

Westinghouse Electric Corp. reports it has received purchase orders from Douglas Aircraft for some \$1,750,000 worth of electrical equipment to power retractable shelters for guided missiles. Equipment is being made in Buf-

Hercules Plans West's First Nitrogen Tetroxide Plant

HERCULES, CALIF.—First plant in the West for production of nitrogen tetroxide—an oxidizing material that shows promise for use in liquid-fuel rockets and missiles—is slated to begin operation in the next few months.

The facility will be a pilot plant which Hercules Powder Co. has begun building at its plant here. As well as being the West's first plant to make N2O4, it will be the first in the country to use a new process developed by Hercules.

The product will be distributed by Hercules Explosives Department, either from San Francisco or from Wilmington, Del.

Parker-Hannifin Appoints Distributor and Rep

HAYWARD, CALIF.—Parker-Hannifin Corp. announces that Robert P. Porter Co., Hayward Municipal Airport, is a newly-appointed distributor for Parker hose fittings and hydraulic accumulators.

According to C. Mercer Barnes, head of the distributing firm in Northern California, extensive stocks will be carried for prompt handling of customer requirements. Technical assistance will be available to the Porter Co., as needed, from Norm C. Burkhardt, Parker-Hannifin district manager in San Francisco. Appointment of James S. Bogart III as a Parker representative in the Pacific Northwest was also announced recently. Bogart will work with Norwest Co., Seattle, and with Bearing Sales & Service, distributor for Parker O-rings in Oregon and Washington areas.

Task Names Distributor

ANAHEIM, CALIF.—Nordskog Co. of Van Nuys, Calif., has been appointed exclusive distributor for Task Corp. hermetically-sealed refrigeration condensing units used in refrigerating aircraft galleys.

falo, N. Y., and Pittsburgh, Pa., and assembled at the Westinghouse facility in Compton, Calif.

Telecomputing Corporation has new contracts totaling \$1,788,000 from Western Electric Co. for production of gyros for the Nike-Hercules missile. The electronic company's Whittaker Gyro Division, Van Nuys, Calif., will produce both rate and position gyros for the new missile contracts.

Parabam, Inc., El Segundo, Calif., has received a contract from H. B. Zachry Co., San Antonio, Tex., for 22 astrodome type tracking camera shelters for use on the White Sands range instrumentation facility.

U.S. Steel Supply Plans LA Warehouse Expansion

LOS ANGELES—Largest steel warehouse west of Chicago will be that of United States Steel Supply, upon completion of a new sheet processing bay at its division headquarters, 2087 E. Slauson Ave. Construction has already begun on the new structure, scheduled to be completed early next year.



Taking part in ground-breaking ceremonies for the new bay are, l. to r., James Smith, Huntington Park, plant superintendent; F. J. Bruckner, San Marino, district manager, and B. K. Taylor, Torrance, assistant district manager.

The facility will provide complete service for the plant's full range of carbon and stainless steel and aluminum sheet products. According to F. J. Bruckner, district manager of U. S. Steel Supply, a division of U. S. Steel Corp., new equipment will round out the Los Angeles plant's facilities for processing carbon and stainless steel and aluminum sheets to ordered widths and lengths. It will also provide specialized services in shaping and treating products to specifications.

The Los Angeles plant is division headquarters for the division's marketing and servicing operations in Southern and Central California, Arizona and New Mexico.

Tidewater Oil Completes Water Purifying Plant

SAN FRANCISCO—A water purifying plant for use in high pressure steam boilers has been completed at Tidewater Oil Company's Avon Refinery 40 mi. north-east of here.

One of the largest on the West Coast,

the new plant is designed to treat 667 gallons of water a minute and will operate automatically to remove mineral impurities. It will even clean itself when necessary.

The plant will run continuously to further purify the water supplied to it by an already-existing water clarifying and filtering plant on the grounds of the 114,000 barrel-per-day refinery.

Schlage Lock Purchases Two Los Angeles Companies

SAN FRANCISCO—Two Los Angeles companies that manufacture a line of residential locksets known as the "California" lock, have been purchased by Schlage Lock Co., Marron Kendrick, president, announced.

"In order to take advantage of the lower manufacturing cost in southern California," Kendrick said, "production and distribution of this line will be carried on from its present location in Los Angeles and will be operated as a separate division under the name California Lock Company."

Standard Schlage products will continue to be manufactured by the firm here, he said, although some production equipment is being transferred to Los Angeles to increase the capacity of the plant there.

Earlier reports on the purchase erroneously indicated that the San Francisco firm might move most of its facilities to Southern California.

Alcoa to Host Western Industrialists

VERNON, CALIF.—A select group of Western industrialists will be shown the newest aluminum screw machine techniques when they are guests of The Aluminum Co. of America on September 17 and 18.

Also on display during the two-day exhibition will be typical products made at Alcoa's Vernon Works, including castings, forgings, extrusions, tubing and rivets.

In addition to the exhibits, each guest will be allowed to tour the Vernon works and see a film titled "The Four Amazing Alloys."

The demonstration is being sponsored by Alcoa in cooperation with Ducommun Metals and Supply Co. and Pacific Metals Co., Ltd.

Westinghouse Schedules Two New Facilities in West

SAN FRANCISCO—A field assembly shop and warehouse for the gearing division of Westinghouse Electric Corp. will be established in nearby Emeryville. In announcing plans for the new facility, Walter J. Maytham, Pacific Coast vice president, said the move was made to get the company's gearing products closer to Western customers with the shortest possible shipping schedule.

The Emeryville shop, located at 815 Peladeau St., will stock all parts for Westinghouse moduline gearmotors, package motor reducer drives, concentric shaft reducers, plus the new shaft-mounted speed reducers from 1 to 30 hp.

Another expansion for Westinghouse is the product distribution center now being built in San Lorenzo, just south of Oakland. The one-story building, which has 107,000 sq. ft. of floor space, is scheduled for completion in November.

This facility will consolidate several activities of the firm in the central West Coast area, providing warehouse space for lamp division products, and for Westinghouse Appliance Sales as well as offices for several departments.

Westinghouse Electric Supply Co. (WESCO) will continue to maintain separate headquarters and facilities in Oakland and San Francisco.

Insto-Gas Names Rep In Salt Lake City

SALT LAKE CITY, UTAH—W. Blaine Martin Co., 41 S. Third East, has been appointed manufacturers' representative for the Insto-Gas Corp., Detroit, Mich. The firm will handle the Insto-Gas torch and furnace line and the Insto-Hot heater line in eastern parts of Washington, Oregon and Nevada, and, for heaters only, will serve Montana, Idaho, Wyoming, Utah and Colorado.

New Dwyer Name

PORTLAND—Dwyer Lumber & Plywood Co. is the new corporate name of Dwyer Lumber Co. The firm recently completed a \$1,500,000 plywood plant adjacent to its mill at 6637 S. E. 100th Ave. here.

Rheem Mfg. Sells Plant

SAN PABLO, CALIF.—Rheem Manufacturing Co. recently sold its plant here to Kawneer Co., Niles Mich., but retained 25 acres at the site for possible future expansion.

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Southern California Group of Manufacturers Plans Trade Fair Oct. 29-31

LOS ANGELES—An all-industry trade fair Oct. 29-31 that is expected to attract some 7,500 top planning, procurement and production executives in this area will celebrate the first anniversary of Associated Specialists, Inc., an association of Southern California manufacturers.

To be held in Shrine Exposition Hall here, the event will be open for participation by Southern California firms whether they are members of the trade association or not.

According to George Hanson, Associated Specialists' president, the fair will differ from previous exhibits in several ways, notably that every phase, from parking to meal planning for the luncheons and dinners, has been carefully planned to assure the smoothest operation.

Other welcome features he mentioned are "no speeches, blaring music, no movies, and no interruptions to interfere with the quiet, business-like atmosphere."

The trade fair will not be open to the public—only actual prospects for services or products of exhibitors will be in attendance. Participating firms will be allowed to submit guest lists of those whom they would like to have invited to the exhibition and activities.

The exhibit will run from 10 a.m. to 10 p.m. each of the three days.

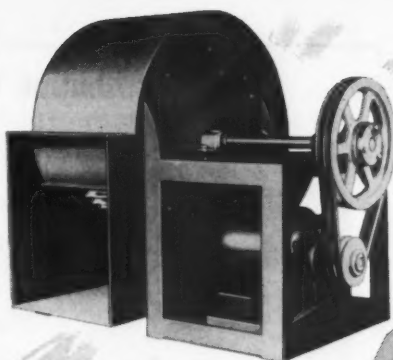
Richfield-Stauffer Company Plans New Chemical Facility

LOS ANGELES—Richfield Oil Corporation of Los Angeles and Stauffer Chemical Company of New York have confirmed that their jointly owned subsidiary, American Chemical Corporation, is actively planning construction of a plant for the production of chlorinated hydrocarbons. Plans call for location of the petro-chemical plant in Southern California. C. B. Braun & Co., Los Angeles are conducting preliminary design studies.

Oregon Handling Equipment Takes on Valley Craft Trucks

PORTLAND—A new line of heavy duty aluminum two-wheeled hand trucks manufactured by Valley Craft Products, Inc., of Lake City, Minn., has been taken on by Oregon Handling Equipment Co. for its Oregon and southwestern Washington sales territory, according to Lyle Van der Cook, president of Oregon Handling.

Valley Craft produces a specialty line of hand trucks equipped with pneumatic tires and built-in brakes operated by a lever on the hand grip.



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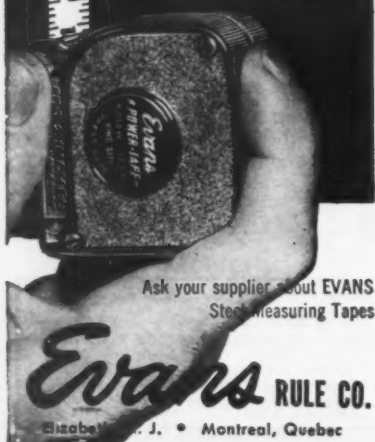
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New Distribution Center for Reliance



MOST RECENT distribution center in a national network is this one opened recently by Reliance Electric and Engineering Co. at 2557 Yates Ave., Los Angeles. The one story, 12,000-sq. ft. building houses the firm's Los Angeles district sales staff as well as a large stock of Reliance drive products for all industries in the Southern California and Arizona area. Reliance is also completing an expansion of its West Coast distribution center in Burlingame.

Montgomery Ward to Build Warehouse, Paint Factory

SAN LEANDRO—Montgomery Ward and Co. has announced a multi-million dollar expansion program in this area that will include a large warehouse-distribution center and a paint factory here, and an addition to its Oakland retail store.

The distribution center, a 595,000-sq. ft. building, will be the supply point for Ward stores in California, Nevada and Arizona. Warehoused there will be heavy merchandise such as furniture, appliances, building materials and farm equipment.

The new paint factory, covering 35,000 sq. ft., will enable Ward's to eliminate paint shipping costs and to supply Western customers more promptly. Some 275 persons will be employed at the new San Leandro facilities.

The Oakland plans call for enlarging both the mail order and retail departments in a new four-story building. Facilities in the combined expansion program will include a repair shop for Ward's Bay Area stores, a plumbing and heating engineering office for customer service and an automobile-truck service station.

Construction is now under way, with completion planned for next spring.

PG&E Anticipates More Atomic Plant Construction

SAN FRANCISCO—At least one 200,000-plus kilowatt capacity nuclear power plant by 1965 is in the picture for the northern and central California system of Pacific Gas & Electric Co., according to *Norman R. Sutherland*, president of the utility firm.

The executive said the electric generating plant, or plants, will be in addition to the 60,000-kw. plant the firm is now building at Humboldt Bay. This facility, costing \$20,000,000, is scheduled for completion in mid-1962. PG&E also

operates, with General Electric Co., a 5,000-kw. experimental power plant at Vallecitos, Calif.

Exact location or dates for the proposed new construction was not given by Sutherland, but it has been previously announced that a key factor for locations is the cost of nuclear-generated power in comparison to conventional electricity-producing means.

Yuba Consolidated Buys Western Rolling Mills

SAN FRANCISCO—Yuba Consolidated Industries, Inc., has purchased Western Rolling Mills, Inc., of San Jose, Calif.

In announcing this acquisition, Yuba president and chairman of the board *John L. McGara* stated that the steel-making and steel-rolling facilities of Western will be enlarged, modernized and moved to a 140-acre site near Tempe, Ariz., 13 miles from Phoenix.

The plant, which is expected to be in full production before the end of 1958, will be a primary source of steel, including a full line of concrete reinforcing bars, merchant bars and light structural shapes and will serve the entire expanding southwest area, with particular emphasis on the state of Arizona.

Total investment in plant, land and other facilities will amount to approximately \$2,500,000.

Columbia Basin Firm Builds Steel Fabricating Plant

WALLA WALLA, WASH.—Columbia Basin Steel & Iron Co. has begun construction of a fabricating plant on the Walla Walla Port district property at Burbank. The new facility, expected to have an annual payroll of \$500,000, will fabricate steel buildings, structural steel and other products.

Ground breaking ceremonies for the plant were attended by participants in a tour of the "Miracle Miles" of the industrial development that extends from Wallula to Burbank, Wash.

Illinois Tool Works Opens Western Division

HAWTHORNE, CALIF.—A Western division, to be known as the Calinoy Division, has been established by Illinois Tool Works, according to an announcement by *Harold Byron Smith*, president. Facilities of the new division are located at 12917 Cerise Avenue, Hawthorne, Calif.

Smith stated that Calinoy Division will function as the company's West Coast headquarters for the sales, engineering and manufacturing of metal and plastic features designed and developed for special purpose applications in the missile and aviation industries.

The new division will also function as the district sales office for the distribution of the company's Shakeproof Division and Fastex Division.

Herbert O. Hansen, formerly Shakeproof district sales manager, has been promoted to division sales manager. *Thomas R. Boyd* will be in charge of engineering and manufacturing.

Fresno Area May Get Paper Products Plant

FRESNO — Tentatively scheduled for construction on a 15-acre site near Pinedale is a paper converting plant that will include office, warehouse and factory buildings. Negotiations for the plant site, including application for light industrial zoning in the area, are now under way.

Although the paper firm was not identified in early reports, except as a New York company with assets of more than \$100,000,000, other sources indicate the prospective manufacturer is International Paper Co. of New York, which also has plants in San Jose and Los Angeles.

Western Firms Appointed By Graham Mfg. Corp.

NEEDHAM HEIGHTS, MASS.—Three new Western representative firms have been appointed by Graham Mfg. Corp. to handle its complete line of stud welding equipment.

Southern California representative is Wiley Welding Supply, Inc., of 2416 W. Vernon Ave., Los Angeles. Handling the products in Northern California, Utah and Nevada is William Corns, Baywood Ave., Ross, Calif., while Thermo Tech Products Co., 2466 S. Delaware, Denver, will represent Graham in Colorado, Wyoming, Arizona and New Mexico.

New Long-Lok Quarters Provide 300% More Space

SANTA MONICA, CALIF.—More than 300 per cent more floor space is now available for the Long-Lok Corporation following its recent move to new quarters at 2601 Colorado Avenue. The company's move from its previous location

at 2018 Colorado Ave. was made necessary by its continuously increasing volume of business.

The firm manufactures Long-Lok self-locking, self-sealing bolts and screws, a vibration resistant screw fastener for aircraft and commercial applications. It has representatives and licenses in principal areas throughout the country.

Electroforms, Inc., Has New Facility in Gardena

GARDENA, CALIF.—Initial operations began recently at a new plant for Electroforms, Inc., producer of aircraft, missile and tooling structures.

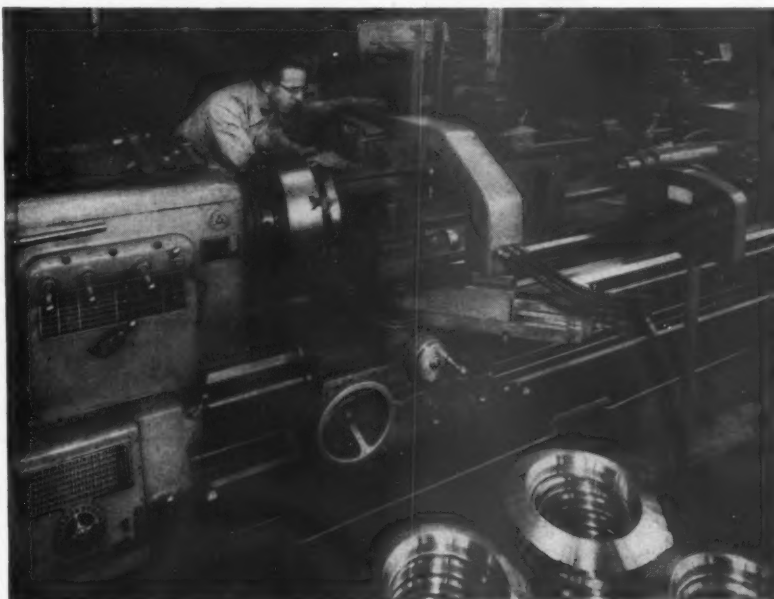
Previously located at 1841 W. Gage Ave., the company now occupies a 20,-

000-sq. ft. plant that will be the largest in the country devoted to this particular type of production, said *Paul Silverstone*, president.

Electroforming is a relatively new technique in which parts, usually of complicated contour, are created by electrodeposition of such metals as copper, nickel, silver or iron on an expendable mandrel or form.

Standard Steel Distributor

PORTLAND—Standard Steel Corp. recently appointed The Guthrie Machinery Co. Oregon distributor for its asphalt plants and sub-units for them. The products include both portable and semi-portable plants used for making hot mix asphaltic concrete.



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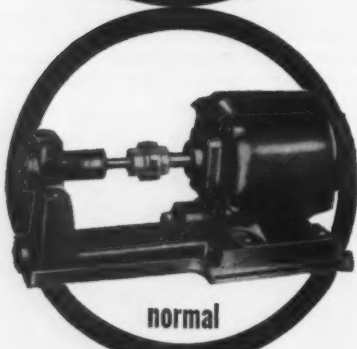
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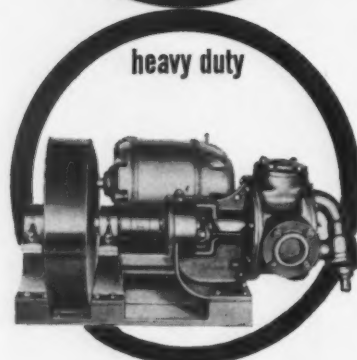
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Millbrae, Calif.

... for more details, circle No. 76

Ramo-Woolridge to Build Big Research Facility

LOS ANGELES—The Ramo-Woolridge Corp. has announced plans to construct a multi-million dollar research and development facility in the Canoga Park-Chatsworth area in the Western section of the San Fernando Valley.

Senior vice president *General Harold L. George*, said the firm will buy a 90-acre site near Chatsworth Reservoir.

The first units of the new center will provide space for some 2,000 scientists, engineers and administrative personnel. George said construction will start as soon as conditional use zone is granted, and occupancy should begin approximately 18 months thereafter.

GE Opens Electronic Tubes Sales Office in San Mateo

SAN MATEO, CALIF.—An expanded sales office for electronic tubes and components was opened recently by General Electric Co. at 444 Peninsula Ave. The office will serve equipment manufacturers in seven Western states and wholesale distributors in the San Francisco, Sacramento and Fresno.

Sales of receiving tubes, "Five-Star" high reliability tubes and computer tubes will be handled by *E. N. Phillips*, district sales manager. *Thomas C. Andersen*, district sales manager, formerly

of San Francisco, will handle distributor sales of G-E electronic tubes, semi-conductors, high fidelity amplifiers, miniature lamps and vitreous enameled resistors.

Johns-Manville Plant Now Producing Softboard

KLAMATH FALLS, ORE.—Initial operations for production of softboard are now in progress at the new 337,000-sq. ft. Johns-Manville plant north of here. Completed last spring, its start of operations was delayed because of unfavorable conditions in the building products market.

Hiring of personnel—expected to be about 250—began in July and installation of equipment has been going on for some weeks. An annual payroll of more than \$1,000,000 is expected at the facility, which represents an investment of about \$12,000,000 including building costs and timber needs. The complete plant consists of six general groups of buildings.

The Johns-Manville plant is one of the first major plants to utilize Oregon's lodgepole and jackpine, which is used in manufacture of softboard, an acoustical and insulating material.

New Quarters for Acme

LOS ANGELES—New quarters for Acme Cellophane Converting Corporation are at 4327 N. Temple City Blvd. in Rosemead, Calif. The firm moved recently from 1701 S. Central Ave., here.

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WESTERN INDUSTRY — September 1958

Stanley Works Gets New Western Warehouse Center

LOS ANGELES—Regional sales and warehouse operations for several divisions of The Stanley Works, New Britain, Conn., are now consolidated in a new Western facility at 7141 S. Paramount Blvd., Pico-Rivera. The recently completed building, covering 20,000 sq. ft., is part of the firm's regional warehouse expansion program.

Harvey A. Clark has been appointed manager of the corporate office and warehouse which will house operations of the Stanley-Judd drapery hardware division for 11 Western states, the Stanley Steel Strapping division for Southern California, and the Stanley Electric Tools division, including a repair center to serve Southern California. Regional sales offices are also maintained by the tools and hardware divisions.

Hyster Opens Sales-Service Center in Medford, Ore.

PORTLAND—A branch sales and service center has been opened by Hyster Sales Co., sales and service representatives for Hyster-built industrial trucks, at 654 S. Grape St. in Medford, Oregon. Announcement was made by John Givens, Portland manager.

The center will provide service for the southern Oregon and northern California areas and is equipped to handle all Hyster-built industrial trucks.

The new branch provides 10,000 square feet of store space and ample off-the-street customer parking. Key men are Ken Campbell, sales; Lee Yandle, service; and Ed Saltzer, parts.

\$2,000,000 Fire Brick Plant Planned in Stockton Area

STOCKTON, CALIF.—Proposed plans for construction of a \$2,000,000 refractories plant were announced recently after Mexico Refractories Co. of Mexico, Mo., obtained an option to purchase a 40-acre site near here.

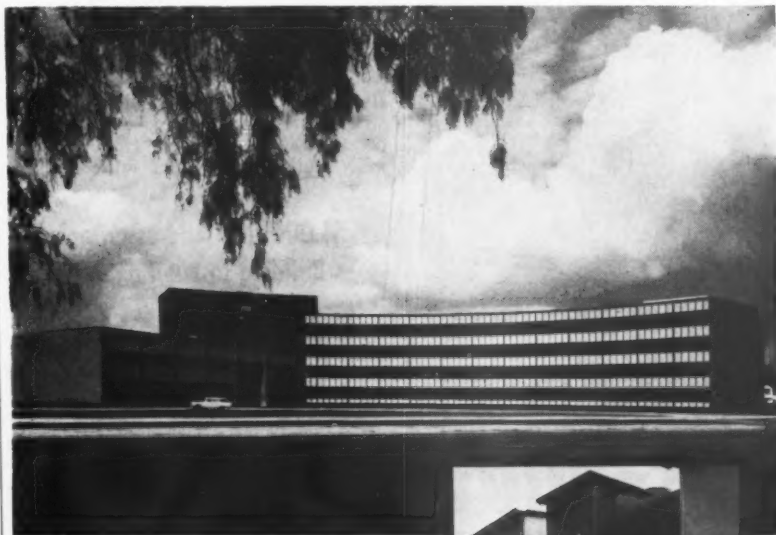
Fire brick and similar products will be manufactured at the facility which will be located north of Lodi.

Mexico Refractories Co. owns clay deposits in this area, but this will be its first plant in the West. It is presently modernizing its Missouri plant.

AIR-MAC Opens Yakima Branch

SEATTLE—Air-Mac of Washington, Inc. headquartered here, recently opened a new branch in Yakima to handle lines of its materials handling division. The new branch outlet is under the management of Dick Anderson.

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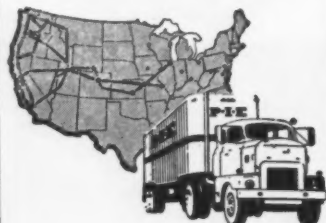
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U. S. Plywood Contracts Pacific Coast Plywood

PORTLAND—An arrangement whereby U. S. Plywood Corp. will market the entire fir plywood output of the Pacific Coast Co. has recently gone into effect.

The arrangement, according to a joint announcement by S. W. Antoville, president of U. S. Plywood, and Hugh J. Jacks, president of the Pacific Coast Co., involves a 36,000,000-square foot annual production capacity of the Pacific Coast Co.'s plywood mill at Sonoma, Calif.

With this newest addition, Antoville states, U. S. Plywood will have available an annual volume of approximately 1,000,000,000 square feet from its own mills and other contract sources.

\$1,000,000 Addressograph Building in Los Angeles

LOS ANGELES—A \$1,000,000 building under construction here will house the direct factory branch service headquarters for Addressograph-Multigraph Corp. in this area.

Facilities for sales, training classes, equipment repairing, embossing and pre-printing for some Multith machines will be included in the building.

San Leandro Firm Appointed Distributor for Hydepak

SAN LEANDRO, CALIF. — New Northern California distributor for Hydepak refuse-collection truck bodies is M & H Truck & Trailer Service, 299 Park St. Henry Rossia, long-time Hydepak

representative who joined M & H recently, will handle sales of the Hydepak, a fully-enclosed steel body mounted on standard trucks. Designed for efficient, sanitary loading and transport of refuse, it features a hydraulically-actuated compressor plate which presses refuse into the body as it is collected.

Golden Citrus Juices, Inc., Buys Arizona Plant Site

YUMA, ARIZ.—Golden Citrus Juices, Inc., of Fullerton, Calif., has announced purchase of a 10-acre parcel of land in the Yuma Mesa's industrial tract for the proposed construction of a frozen citrus juice concentrate plant.

Design and construction plans are now under way, but actual construction dates have not been set, depending on availability of utilities as well as the amount of juice fruit that will be available to the plant for processing.

Golden Citrus Juices, which is affiliated with the Yuma Citrus Co., has operated a similar plant in Fullerton since 1950. Products are marketed under the Minute Maid-Snow Crop, Tip Top and Real Gold Labels.

Pella to Handle Barber-Colman Line

PORTLAND—Appointed distributor for this area for the Barber-Colman Co. is Pella Sales Co., 2250 E. Burnside Street. The Barber-Colman line includes overhead doors, radio and electric door controls and allied lines.

Pella Sales Co. is distributor in this area for the Pella line of wood casement windows, wood folding doors, screens, and other items.



PACIFIC NORTHWEST visitors recently were three men from Jeffrey Mfg. Co., shown here in the Portland office of Northwest Chains & Sprockets, Inc. From left, are William Davis, who recently succeeded retiring Stanley Mercier as manager of Jeffrey's Burlingame, Calif., warehouse; Keith Beachler, new West Coast field engineer for the firm; Frank Berg, head of Northwest Chains & Sprockets in Portland, and Robert D. Prushing, Jeffrey's manager of distributor sales for the West Coast.

Clark & Wheeler Firm Moves to New Quarters

PARAMOUNT, CALIF.—A move that provides more than three times their former floor space was completed recently by Clark & Wheeler Engineering, Inc., deep drilling specialists. Formerly located at 12431 Industrial Ave., Hollywood, Calif., the company now occupies a 12,500-sq. ft. plant at 16455 Minnesota Ave. here.

According to Max R. Wheeler, president, the move—fourth in as many years—was necessitated by the company's expansion program and new applications for its services.

Clark & Wheeler, one of the West's leading deep hole drilling companies, specializes in drilling, boring, reaming and honing of aircraft hydraulic cylinders and pistons. The firm also handles deep hole drilling applications for the petroleum, food processing and chemical industries.

Six Portland Firms Announce Expansions

PORTLAND—Factory and warehouse expansion projects have been announced by six firms in the Portland area according to the Industries Department of the Portland Chamber of Commerce. The firms and projects are as follows:

Van Waters & Rogers, Inc., 2950 N. W. Yeon Ave., a one-story, 20,000 square foot block and steel warehouse addition, plus interior remodeling. Estimated cost is \$65,000.

Pierce Trailer & Equipment Co., 14200 N. E. Sandy, a one-story, steel frame plant. Estimated cost is \$40,000.

Davis Industrial Products Co., 1409 N.W. 22nd Ave., a one-story concrete block loading facility and a one-story office and display area. Estimated cost is \$24,000.

North Pacific Lumber Co., 1505 S.E. Gideon, a one-story wood frame warehouse addition. Estimated at \$10,000.

The Texas Co., 3640 N.W. St. Helens Road, steel oil storage tanks including concrete foundations. Estimated cost is \$7199.

Shaver Transportation Co., 4900 N. W. Front Ave., a one-story steel frame warehouse building. Estimated at \$7000.

SPS Western Production Begins at Santa Ana Plant

SANTA ANA, CALIF.—SPS Western, newly-created West Coast wing of Standard Pressed Steel Co., Jenkintown, Pa., has begun production of aircraft fasteners and steel shop and office equipment in its new \$5,000,000 plant here.

Current employment at the facility on Harbor Blvd. is 275, expected to increase to 500 early next year, providing improved sales and service by SPS in the 11 Western states.

Over \$2,500,000 Ordnance Contracts Awarded

PASADENA, CALIF.—The U. S. Army Ordnance District, Los Angeles, 55 S. Grand Ave., announced the award of over \$2,500,000 in Army Ordnance contracts to the following contractors:

The Firestone Tire & Rubber Co., 2525 Firestone Boulevard, a \$2,423,653 contract for Corporal missiles.

North American Aviation, Inc., 6633 Canoga Avenue, Canoga Park, a contract for \$180,000 for rocket engines.

General Electric Co., Computer Department, 1103 N. Central Avenue, Phoenix, Ariz., a \$149,285 research and development contract for a digital computation facility operation.

Douglas Aircraft Co., Inc., 3000 Ocean Park Blvd., Santa Monica, contracts for \$141,856 for Nike missile repair parts and launching area items.

Pabco Enters Contract Insulations Field

SOUTH GATE, CALIF.—The Industrial Insulations Division of Fibreboard Paper Products Corp.—"Pabco"—has entered the industrial insulations contracting field throughout Southern California, according to J. C. Voiles, general manager.

The new service, Voiles stated, is designed to serve both heavy industrial and commercial accounts. Commercial accounts will be serviced by Harry M. Voorhees, while industrial accounts are to be handled by R. E. Bounds. Headquarters for the new contract department will be at 4231 East Firestone Blvd.

Robert Dodd Co. Named To Handle Fococrane Line

PORTLAND—The Robert Dodd Company, industrial truck and machinery distributor, has recently been appointed to handle sales in Oregon and southwest Washington for the McCullough Fococrane, a hydraulic crane attachment for all trucks for use in loading and unloading operations.

The Fococrane is manufactured in Sweden and distributed in the U.S. by McCullough Crane & Hoist Co., Oakland.

PG&E to Build \$250,000 Vallejo Plant

VALLEJO, CALIF.—The Pacific Gas and Electric Co. has announced its intention of purchasing 8.2 acres of land on Carlson Street near Lemon to serve as a site for a \$250,000 service center for the Greater Vallejo-Solano area.

The new center will employ more than 100 people when the facility is completed within the next 24 months.

S. E. Day, PG&E North Bay Division manager, said four or five structures will make up the facility in the beginning but that more units would undoubtedly be added later.

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WESTERNERS AT WORK...

New Departure Division

... of General Motors Corp. gives new assignments to **Lloyd M. (Duke) Woodward** and **David L. Clark**, both located in Los Angeles. Woodward, who has been with the division more than 30 years, is now Western manager of defense contract sales, a newly-created position. Clark, recently manager of New Departure ball bearing sales in the West, is now Western area sales manager.

Electric Steel Foundry Co.

... assigns **Myron F. Pipes** as representative for its Central sales district, primarily handling sales of construction equipment to original equipment manufacturers. **John Oliver** has been transferred to the Central sales office.

Freightliner Corp.

... reports personnel news concerning **Dick Younts**, **Bill LeFevre** and **Norm Chew**. Younts becomes factory sales manager of the Portland truck building firm; LeFevre, chief engineer, heads the newly organized engineering research and development section, and Chew is promoted to be chief engineer in charge of production.



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Shell Chemical Corp.

... has two new plant managers in California, **G. S. Williamson** and **Frank G. Watson**. Williamson, manager of the Pittsburg ammonia plant, will now manage the firm's synthetic rubber



G. Williamson



F. Watson

plant in Torrance, succeeding **Maarten Voogd**, who is retiring this year. Watson has been assistant manager of the Shell manufacturing development department in New York and will now take over Williamson's duties at Pittsburg. Williamson joined the firm in 1936, Watson in 1942.

Pacific Solenoids, Inc.

... announces that **N. Heath McDowell** has been appointed general manager of the firm, which manufactures rotary solenoids for various applications. Before joining Pacific Solenoids, a subsidiary of Illinois Tool Works, McDowell was an executive with Aviation Developments, Inc., of Burbank, Calif.

Bethlehem Pacific Coast Steel

... names **Alexander C. Forrest** as plant superintendent of the electric furnace melting department at the Los Angeles plant.

Fabiricon Products

... reports two recent appointments in the West. **William B. Clayton, Jr.**, was named vice president in charge of all West Coast activities including Lamin-Art plastic laminates, impregnated products and automotive products as made in Fabiricon's 7½-acre plant at 6430 E. Slauson Ave., Los Angeles. **James Pendry** was named sales manager of the laminated products division of Fabiricon, Los Angeles division of the Eagle-Picher Co.

Titan Metal Mfg. Co.



W. Manning

... assigns **Walter F. Manning** to be plant superintendent for its Western division, and **Lorin H. Eddy** as a sales representative in Southern California. Manning, who joined Titan in 1947 in Bellefonte, Pa., will be headquartered at the firm's new brass mill in Newark, Calif. Eddy, who was previously associated with other leading manufacturers and distributors of industrial brass and bronze products, will work from the Titan district office at 315 W. Ninth St., Los Angeles.

Portland Machinery Co.

... appoints **Dell Clement** as sales representative handling machine tool sales in the state of Washington. Formerly employed by Armstrong Manufacturing Co., in Portland, Clement will work out of Portland Machinery's headquarters in Portland.

J. E. Haseltine Co.

... reports several personnel changes in its sales staff. **Bill Kalibak** of Medford is now the southern Oregon sales representative for the mill supply house; **John Wehlitz**, formerly headquartered in Pendleton, Ore., will now handle inside sales in Portland, and **Harry Crowston**, formerly of Saskatchewan, will fill Wehlitz' post, covering the territory of northeast Oregon and southeast Washington.

C. O. Fiedler, Inc.



G. Latshaw

... announces that **Golden Latshaw** has joined the firm as sales and technical director of its new surface system division, created to serve the Western metal finishing industry with complete barrel finishing equipment, media and compounds. Latshaw was formerly president of Hydromatic Metal Finishing Corp. of Cleveland, and has been a finishing consultant in Southern California.

Great Western Aggregates, Inc.

... a subsidiary of Ideal Cement Co., announces that **Thomas C. Brown** has been named sales manager, working out of the firm's main offices in Denver. Brown joined Ideal in 1948 and in 1952 was placed in charge of field experiments for GWA, producer of coated type lightweight expanded shale aggregates made into Idealite, a material that reduces weight and improves quality of finished concrete.

Weyerhaeuser Timber Co.

... appoints **Robert Schlieve** as project engineer, sawmill process, in the firm's central engineering department in Tacoma. **Roger Sands** will succeed him as production manager of the company's Longview, Wash., lumber division branch. Schlieve joined Weyerhaeuser 24 years ago and has been production manager since 1952. Sands affiliated with the firm in 1946 and recently has been general superintendent of sawmill and plywood operations in Cottage Grove, Ore.

Dudley Deane and Associates

... adds **Roger D. McCoy** to its staff as an industrial engineer on automation. Long active in the National Society of Professional Engineers and American Society of Mechanical Engineers, McCoy has recently been manager-owner of Dent Engineers with offices in San Francisco and Joliet, Ill.

Arwood Precision Casting Corp.



G. H. Warde

... promotes **George H. Warde** to the post of Western division sales manager, supervising activities in the 11-state area. Previously Warde has been a sales engineer in Southern California and Arizona territories as well as assistant sales manager operating out of the company's New York office.

Granberg Corporation

... reports that **W. H. Heikkinen** is now regional manager, serving the Northern California area. A graduate engineer, Heikkinen has been connected with the petroleum industry the last six years. He will work out of the Granberg main office at 1308 67th St., Oakland. Granberg manufactures pumps and meters for the petroleum industry, as well as specializing in liquid fertilizer and other chemicals.

Navan Products, Inc.

... invention marketing subsidiary of North American Aviation, has added **Harry J. Noblitt** to its staff as sales manager, to organize a national sales force composed of Navan salesmen, distributors and manufacturers' representatives.

Sierra Electronic Corp.

... appoints **Guy K. Patterson** chief engineer to direct engineering and laboratory programs, including product development. Before joining Sierra, a Philco Corp. subsidiary, in 1948, Patterson was with the Federal Telecommunication Laboratories in New York.

Pennsalt Chemicals Corp.

... announces appointment of **Glen E. More** as general manager of industrial chemicals in its Pennsalt of Washington division. Formerly production manager for the division's plants at Tacoma, Wash., and Portland, Ore., More will now be responsible for both sales and production. A long-time employee of the company, he became general superintendent of Pennsalt's Northwest industrial chemicals production in 1952. More is presently headquartered in Portland, but plans to move to Tacoma in a few months.

Grand Rapids Division, Lear, Inc.

... promotes **Robert N. Nielsen** to be manager of the West Coast area contracts office in Santa Monica, Calif. He succeeds **J. P. Brown**, appointed division general manager of Lear's newly-created Astronics Division. Nielsen joined Lear in April, 1953, and has recently been marketing manager.

Chainveyor Corporation

... announces that **Charles H. Long** now heads its project engineering department, with headquarters at the firm's general offices in Los Angeles, where he has been factory manager the past two years. Chainveyor plans to strengthen this department, accent-

ing the development of new uses and additional adaptations of Chainveyor systems. Long joined the firm in 1947 as production supervisor and also served as district manager in Detroit.

Sel-Rex Corporation

... announces appointment of **Paul Harper** as West Coast representative for the firm, manufacturer of precious metals plating compositions, power rectifiers, metal finishing equipment and other products. Harper, who has been in the electroplating and metal finishing field for some 20 years, will headquarter in the Los Angeles area.

Anaconda Aluminum Co.



J. Smith

... assigns **James F. Smith** as manager of its Columbia Falls, Mont., reduction works, succeeding **Howard G. Satterthwaite**, who has retired. Smith has been with the Anaconda organization since 1926 and recently has been assistant superintendent of Anaconda's Great Falls, Mont., copper refinery.

Fairbanks, Morse & Co.

... names **T. H. Mashy** as manager of their Salt Lake City, Utah, branch office, as successor to the late **H. M. Olsen**. Mashy joined the firm a year ago and has served in San Francisco, Reno and in Pocatello, Ida. He will direct the sales program of the Salt Lake City office which covers Utah, southern Idaho, western Wyoming and eastern Nevada.

Weston Instruments Division

... selects **John C. Washington** manager of its Los Angeles district, supervising all sales and district office operations in Southern California and parts of Nevada. Washington joined Weston, a division of Daystrom, Incorporated, in March. Previously he was associated with Westinghouse, Line Material Co., and Hallamore Electronics.

Superweld Corporation



W. Weltmer

... names **Warren J. Weltmer** production superintendent of the metal joining and processing firm. Weltmer has been with Superweld since 1950, except for a brief period, and has worked in all production departments as well as in the customer service field for years.

Wells Industries Corp.

... reveals that **Frank Bobrick** is the new chief engineer for this manufacturer of missile and aircraft ground handling equipment. A consultant to the firm since February, 1956, Bobrick was previously assistant general manager at Greer Hydraulics Engineering Corp., and helped develop the Nike missile.

Bethlehem Pacific Coast Steel

... makes new engineering assignments in its Los Angeles and Seattle plants. **Norman L. Bock**, former chief engineer in Los Angeles, takes over the same position at Seattle, while **Verl L. Smith** succeeds him at the LA facil-



N. Bock



V. L. Smith

ity. Bock has been with Bethlehem Steel nearly 30 years, in Los Angeles since 1937, and went to Seattle last January to head the engineering staff responsible for the firm's \$25,000,000 expansion-modernization program there. Smith began in the plant engineering department of Bethlehem Pacific and has been chief draftsman in Los Angeles until this promotion.

Standard Screw Co.

... promotes **I. Kirk Schlamp** to be general manager of its Ravenna Metal Products division in Seattle, succeeding **Kemp O. Hiatt**, who is retiring. Schlamp, former factory manager, has been with the Ravenna division the last 16 years.

American Can Co.

... assigns **G. T. Bergstrom** manager of its Seattle plant. A 27-year employee of Canco, Bergstrom has held various positions, including that of plant manager in Los Angeles and assistant manager of manufacturing in San Francisco.

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RUST-OLEUM
STOPS RUST!

Rust-Oleum is distinctive as your own fingerprint. Accept no substitute.

... goes on faster, stops rust, lasts longer over rust!

ONE MAN often does the work of two!

EASIER TO USE—because Rust-Oleum 769 Damp-Proof Red Primer goes over rusted metal after scraping and wirebrushing to remove rust scale and loose rust—usually eliminating costly surface preparations. *Stops Rust*—because Rust-Oleum's specially-processed fish oil vehicle *penetrates* rust to bare metal—driving out air and moisture that cause rust.

LASTS LONGER applied over rust—and teamed up with Rust-Oleum's many attractive finish coatings, assures lasting beauty. Try Rust-Oleum on *your* tanks, metal sash, machinery, wire fences, stacks, girders—or around *your* home. Prompt delivery from Industrial Distributor stocks. Write for illustrated literature with color charts showing colors and applications.

RUST-OLEUM CORPORATION • 2548 Oakton Street • Evanston, Illinois

RUST-OLEUM®

**30% GREATER COVERAGE—
MANY ATTRACTIVE COLORS**

Rust-Oleum covers up to 30% more area, depending upon surface condition and porosity. And you can beautify as you protect with Rust-Oleum finish coatings in Aluminum, White, Red, Gray, Green, Blue, Yellow, Black, etc.

STOPS RUST!®

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Write for special report showing Rust-Oleum penetration to bare metal.

... for more details, circle No. 85 on Reader Service Postcard

